Plasma Display
Television
Service Manual

Chassis: MST9

Product Type: PDP32v69
PDP32V69P
PDP3208
PDP3209

Ver 1.0

Hisense Electric Co.，Ltd.
Apr. 2008

Contents

Service Manual

1.Product Safety Servicing Guidelines

1.1. Precautions and notices

BEFORE SERVICING THE CHASSIS, READ THE "SAFETY PRECAUTION" ON THIS MANUAL.
WHEN REPLACEMENT PARTS ARE REQUIRED, BE SURE TO USE REPLACEMENT PARTS SPECIFIED BY THE MANUFACTURER.

WARNING:
Service should not be attempted by anyone unfamiliar with the necessary precaution on this receiver. The following are the necessary precautions to be observed before servicing this chassis.
1. When replacing a chassis in the cabinet, always be certain that all the protective devices are put back in place, such as: non-metallic control knobs, insulating covers, shields, isolation resistor-capacitor network etc.
2. When replacing parts or circuit boards, disconnect the power cord.
3. When replacing a high wattage resistor (oxide metal film resistor) on the circuit board, keep the resistor 10mm (1/2in) away from circuit board.
4. Connection wires must be kept away from components with high voltage or high temperature.
5. If any fuse in this TV receiver is blown, replace it with the FUSE specified in the chassis parts list.

1.2.Product Safety notice

Many electrical and mechanical parts in the chassis have special safety-related characteristics.

These characteristics are often passed unnoticed by a visual inspection.
Replacement parts, which have these special safety characteristic are identified in this manual and its supplement electrical components having such features are shaded on the schematic diagram and the parts list.

Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts, which do not have the same characteristic as specified in the parts list may create shock, fire or other hazards.

NOTES：
Screen Image retention Do not display a still image (such as on a video game or when hooking up a PC to this PDP) on plasma monitor panel for a long time as it can cause screen image retention. This image retention is also known as "screen burn". To avoid such image retention, reduce the degree of brightness and contrast of the screen when displaying a still image.
A still image displayed too long may cause permanent damage to the PDP Panel
Watching the PDP TV in 4:3 format or other non full screen formats for a long period of time may leave traces of borders displayed on the left, right and centre of the screen caused by the difference of light emission on the screen. Playing a DVD or a game console may cause similar effect to the screen. Damages caused by the above effect

are not covered by the Warranty.

Afterimage on the Screen Displaying still images from Video games and PC for longer than a certain period of time may produce partial afterimages. To prevent this effect, reduce the brightness and contrast when displaying still images for a long time.

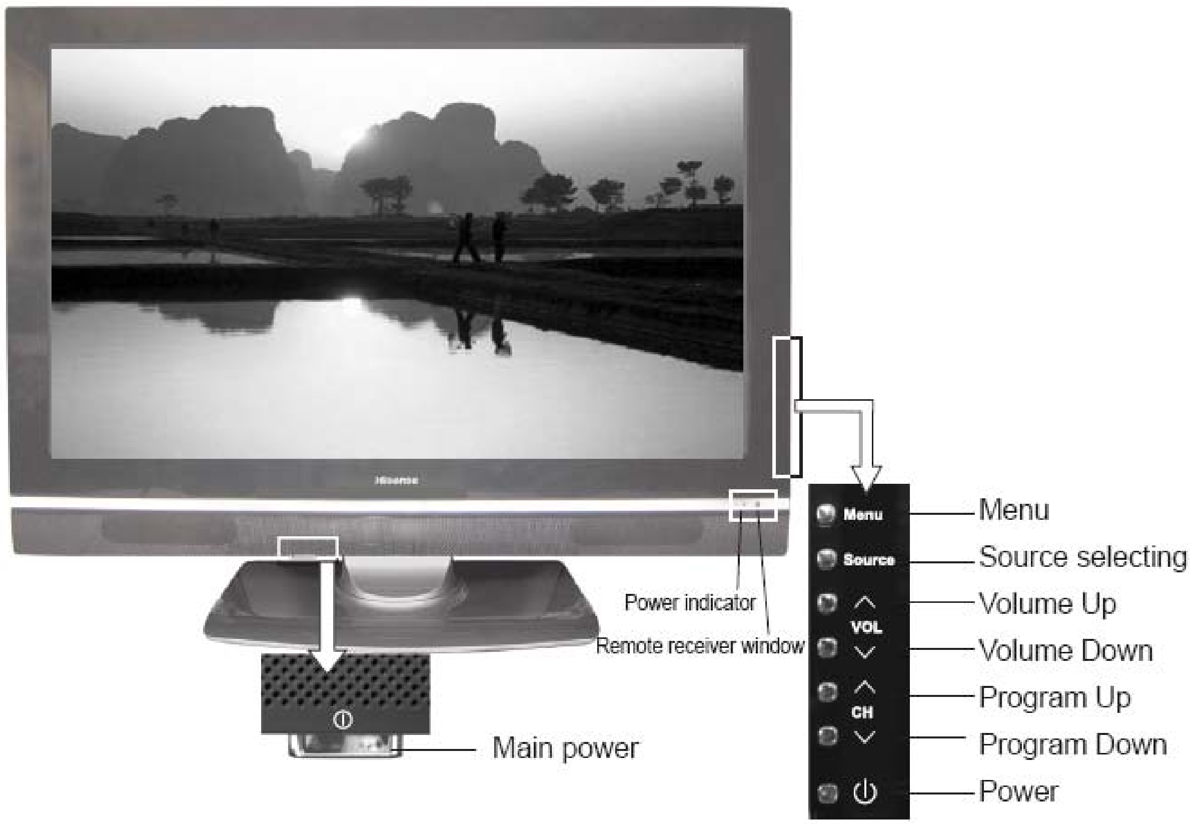
Height The PDP can normally operate only under 2000m in height. It might abnormally function at a place over 2000m in height and do not install and operate there.

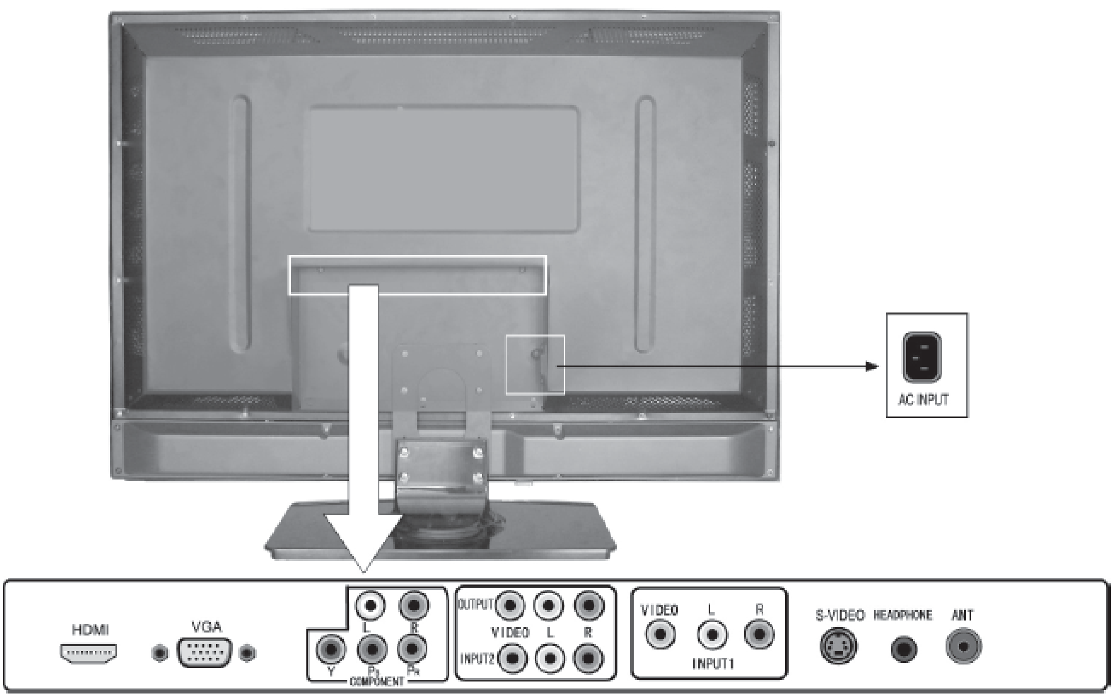
Avoid operating the TV at temperatures below 5 (41°F)

Warranty Warranty does not cover any damage caused by image retention; Burn-in is not covered by the warranty.

2、Product Fuction Specifications

2.1 Product Function





- High end flat display
- HDMI input
- High definition compatible
- Wide Screen display optimized for cinema viewing
- Multimedia display :TV/PC
- High clear picture
- Audio equalizer
- Color enhancer ,contrast enhancer

2.2. Specifications

<table>
<tr><td>PDP panel</td><td colspan="2">Plasma panel 32"</td></tr>
<tr><td>Native Screen Resolution</td><td colspan="2">852 x 480</td></tr>
<tr><td>Television system</td><td colspan="2">SECAM/PAL</td></tr>
<tr><td>Sound system</td><td colspan="2">BG / DK / I/L/L’</td></tr>
<tr><td>Channel coverage</td><td colspan="2">VHF-L: E2-S8
VHF-H: S9-S37
UHF: S38-E69</td></tr>
<tr><td>PC mode (DB15)</td><td colspan="2">60Hz
640 x 480, 800 x 600, 1024 x 768</td></tr>
<tr><td>YPBPR mode</td><td colspan="2">50Hz
576 i/p, 720p, 1080i
60Hz
480i /P，720p, 1080i</td></tr>
<tr><td>HDMI mode</td><td colspan="2">RGB 640 x 480, 800 x 600, 1024 x 768
YPBPR 50Hz
576p, 720p, 1080i
YPBPR 60Hz
480p; 720p, 1080i</td></tr>
<tr><td>Static contrast ratio</td><td colspan="2">50 : 1</td></tr>
<tr><td>Brightness</td><td colspan="2">500 cd/m²</td></tr>
<tr><td>Viewing angle</td><td colspan="2">140° (H/V)</td></tr>
<tr><td>Power source</td><td colspan="2">AC 100V-240V，50/60Hz</td></tr>
<tr><td>Power consumption</td><td colspan="2">190W</td></tr>
<tr><td>Audio output</td><td colspan="2">2 x 5 watts</td></tr>
<tr><td>Audio filter</td><td colspan="2">Equalizer 5 x bands</td></tr>
<tr><td rowspan="7">Connection interface</td><td>RF Input:</td><td>RF Antenna x 1</td></tr>
<tr><td>Video Input:</td><td>YUV x 1 ,S-Video x 1,AV x 2</td></tr>
<tr><td>Graphic Input:</td><td>PC analog (DB15) x 1,HDMI x 1 (HDCP)</td></tr>
<tr><td>Audio Input:</td><td>YUV/ PC analog x 1 ,S-Video /AV1 x 1, AV2 x 1</td></tr>
<tr><td>Audio Output:</td><td>audio output x 1
headphone x 1 (Jack 3,5mm)</td></tr>
<tr><td>Video Output:</td><td>video output x 1</td></tr>
<tr><td>Other:</td><td></td></tr>
<tr><td>Dimensions</td><td colspan="2">838mmX647mmX240mm (LXWXH)
(including stand)</td></tr>
</table>

3、PDP panel spec

3.1 General description:

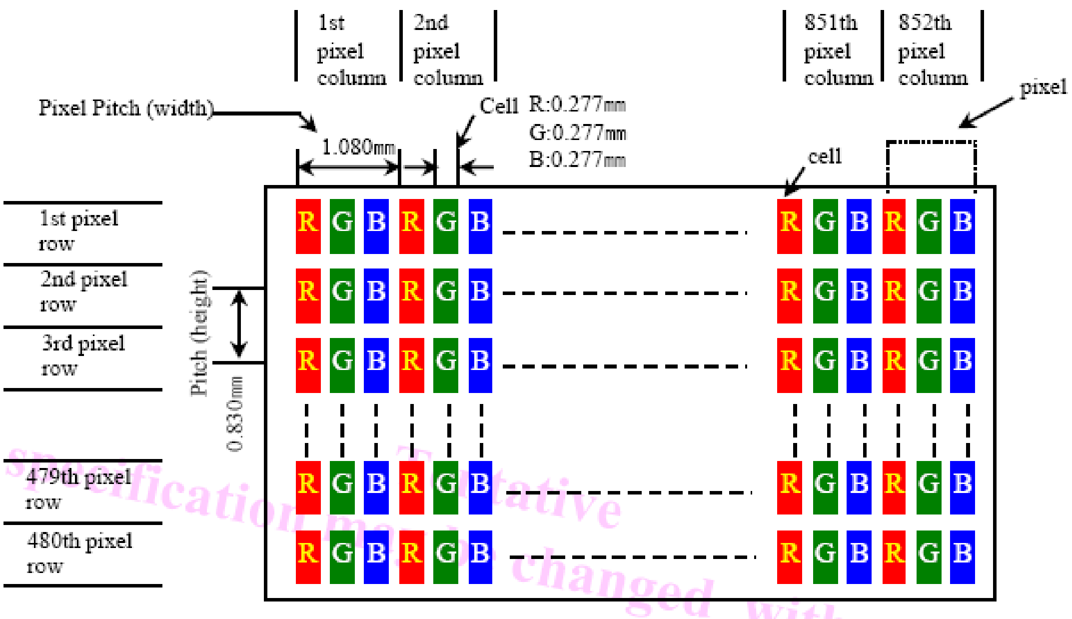
The PDP32F1#### requires only 8/10bits of digital video signals for each RGB color.
In addition to the video signals, six different DC voltages are required to operate the display.

❑ GENERAL SPECFICATIONS

✓ Model Name	: PDP32F1#### (32F1#### Model)
✓ Number of Pixels	: 852(H) × 480(V) (1pixel=3 RGB cells)
✓ Pixel Pitch	: 831㎛ (H) × 830㎛ (V)
✓ Cell Pitch	: 277㎛ (H) × 830㎛ (V) (Green Cell basis)
✓ Display Area	: 708.01(H) × 398.4(V) ±0.5mm
✓ Outline Dimension	: 790(H) × 466.5(V) × 59.1(D)±1mm
✓ Pixel Type	: RGB Closed type (well)
✓ Number of Gradations	: (R)1024 × (G)1024 × (B)1024
✓ Weight	: 8.05 Kg ± 0.5 Kg (Net 1EA) 123.5Kg ± 5 Kg (12EA/1BOX)
✓ Aspect Ratio	: 16:9
✓ Practical Brightness	: Typical 550cd/㎡ (25% White Window)
✓ Contrast Ratio	: Average 50:1 (In a bright room with 100Lux at center)
✓ Power Consumption	: Typical 160 W (Full White) Max.200W (With PSU 250W)
✓ Expected Life-time	: more than 60,000 Hours of continuous operation

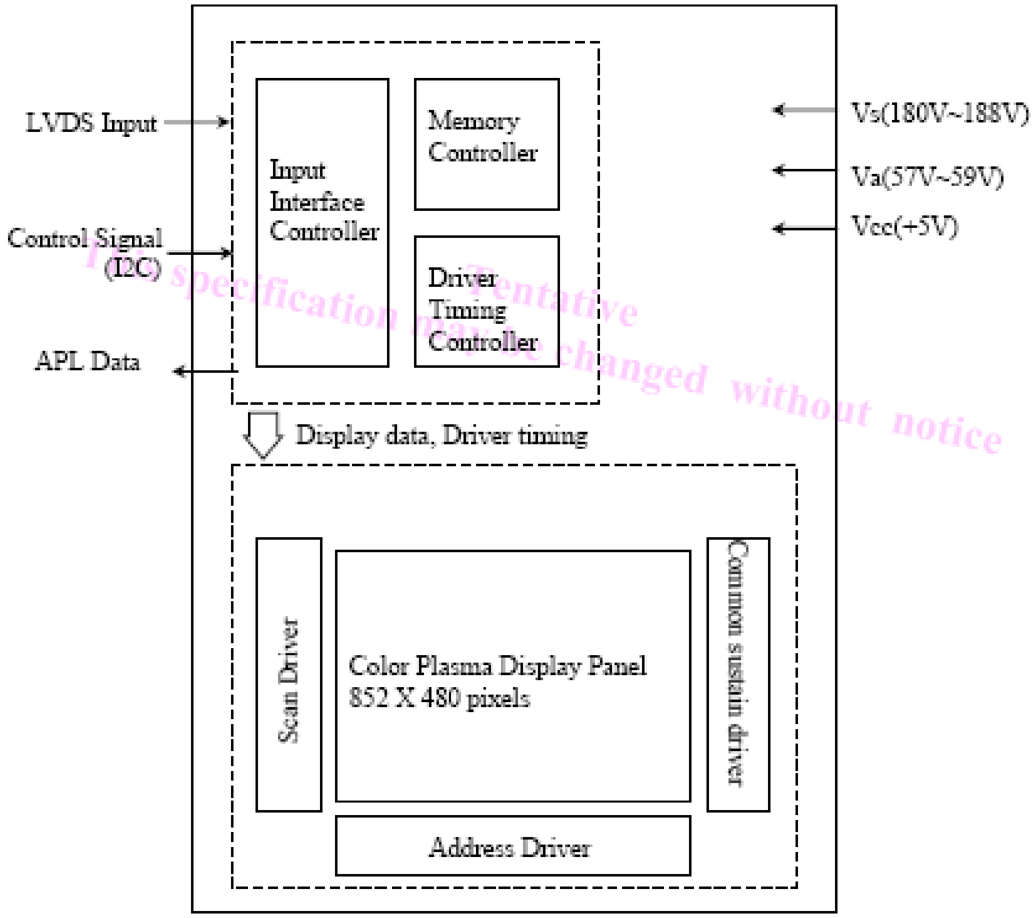
☞ Life-time is defined as the time when the brightness becomes half of its initial value.

✓ Display Dot Diagram



3.2. Panel block diagram

❑ BLOCK DIAGRAM

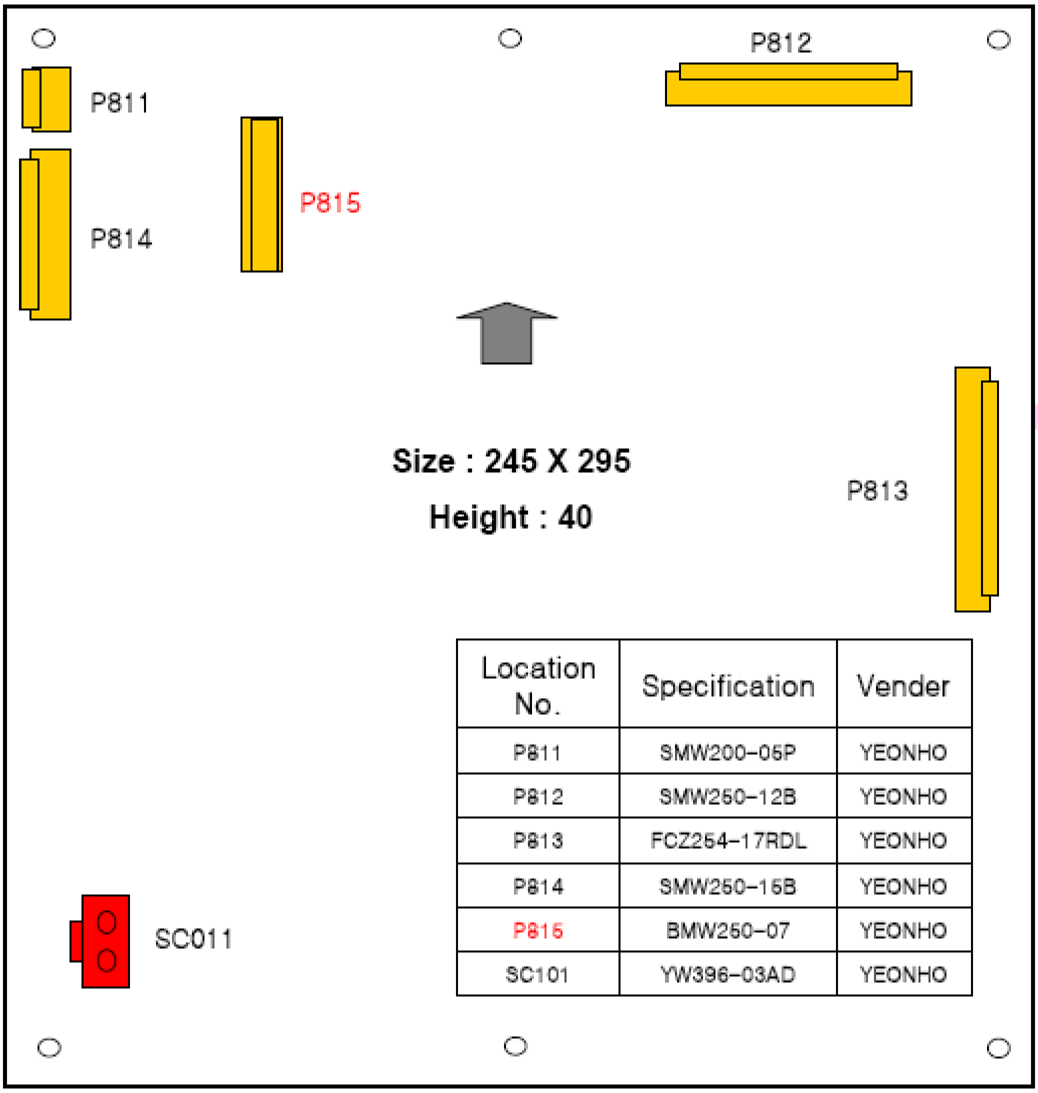


☞ Applied Voltage level is specified at the time when Full-White pattern is displayed on the panel.

3.3.Power (PSU) description

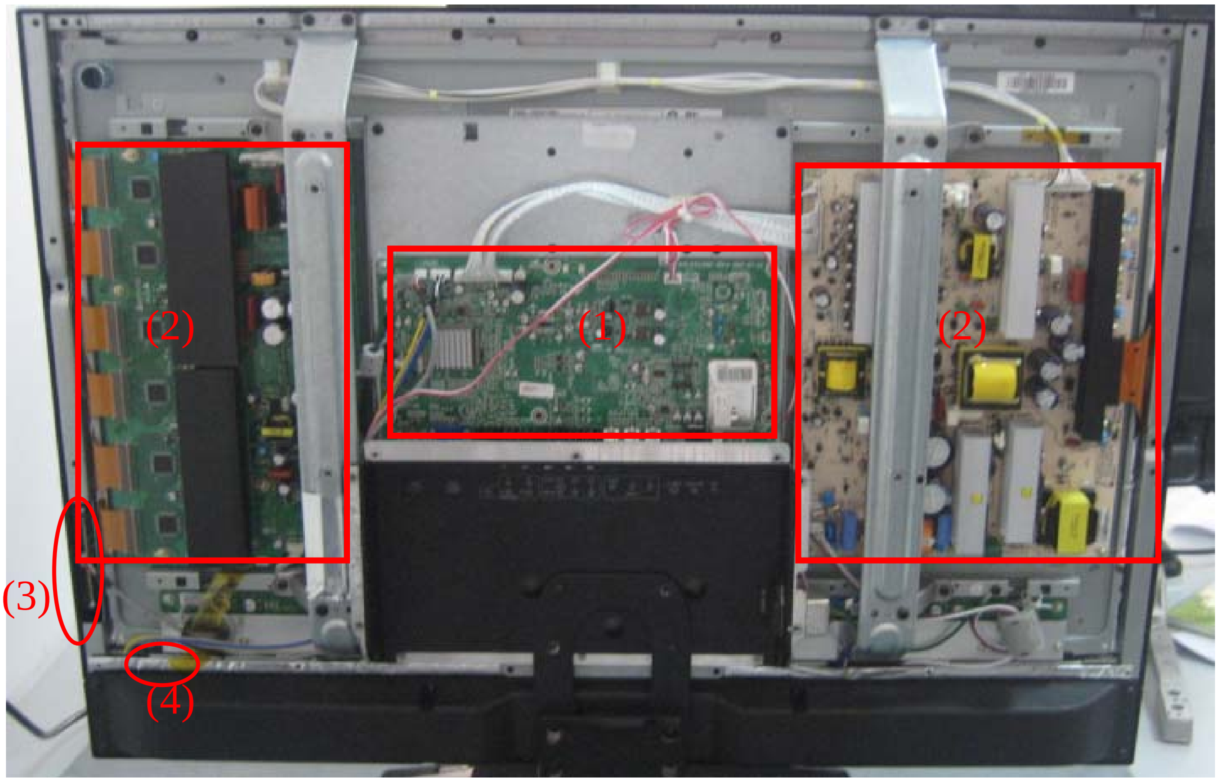
Standard Voltage Range	AC 100V ～ 240V
Available Voltage Range	AC 90V ～ 265V
Frequency Range	50Hz ～ 60Hz(± 5Hz)

3.4.Power block diagram



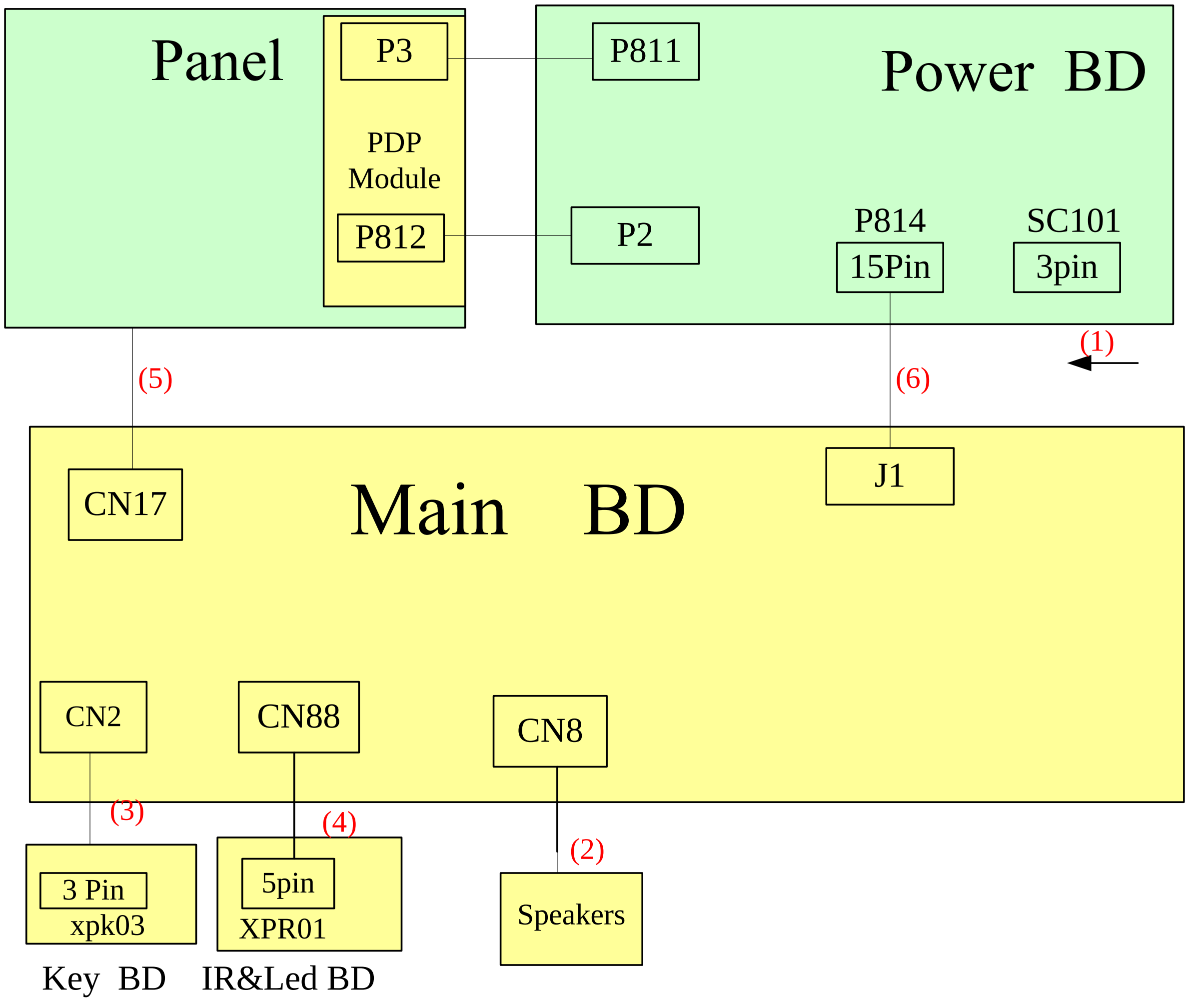
Location No.	Specification	Vender
P811	SMW200-05P	YEONHO
P812	SMW250-12B	YEONHO
P813	FCZ254-17RDL	YEONHO
P814	SMW250-15B	YEONHO
P815	BMW250-07	YEONHO
SC101	YW396-03AD	YEONHO

4. Chassis Layout and Overall Wiring Diagrams
4.1 Chassis Layout



No	Description	Part No	Type/Model	PCB
(1)	Main Board	117040	RSAG2. 908. 1099-3	RSAG7. 820. 1234
(2)	PDP module	1047782	PDP32F1	Outsourcing
(3)	Keypad Board	113649	RSAG2. 908. 1118	RSAG7. 820. 1141
(4)	IR&Led Board	115365	RSAG2. 908. 1244	RSAG7. 820. 1349

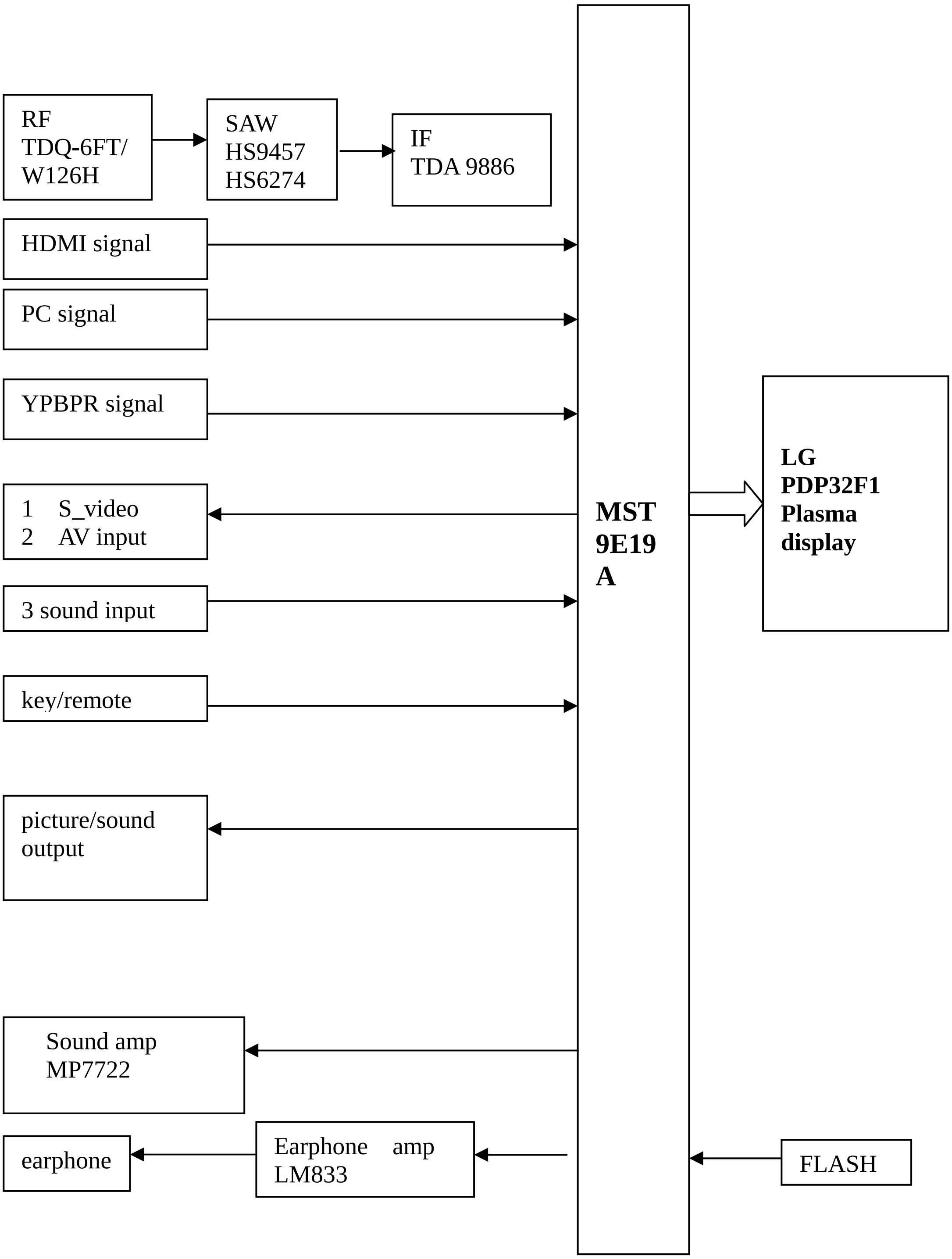
4.2 Overall Wiring Diagrams



No	DESCRIPTION	SPECIPICATION	NOTE
1	Main Power	VH-3Y-600\ROH	Power Inlet-->Power BD SC101
2	Audio output (L/R)	TJC3H-4Y-650-900\ROH	Main BD CN8<-->Speaker L/R
3	Buttons	TJC10T-3Y-700-P\ROH	Main BD CN2<--> Keypad BD XPK03
4	LED & IR	TJC10T-5Y-600\ROH	Main BD CN88<--> LED&IR BD XPR01
5	LVDS signal	FF-HX19-11\ROH	Main BD CN17<-->Panel
6	Power and communication between Main BD and power BD	TJC3T-15Y-300\ROH	Power BD P814<-->Main BD J1

4.3 Signal processing diagram

The signal board is composed by the main board .The main chip for video decoder is MST9E19A produced by MSTAR co., ltd.



5. Factory/Service OSD Menu

5.1 To enter the Factory OSD Menu

a. With factory RC (remote control)

1. Press "M" button and enter factory mode.
2. Press "Menu" button and enter factory OSD menu.
3. Press "CH+"/"CH-" button select the function menu, press "VOL+"/"VOL-" enter the selected function menu. Press "VOL+"/"VOL-" button adjust values in the menu.
4. Press "M" button exit factory mode in the factory OSD menu.

When TV outgoing factory,user can not enter factory OSD menu with Factory Remote

b. With user's RC

1. Power TV On
2. Press Menu button and call up User OSD Menu
3. Select Sound-> Balance
4. When Balance value is "0",Enter 0->5->3 ->2 in sequence.
   Note: If necessary, re-do number keys.
5. Factory OSD appears.
6. Press the standby button then AC turn off and restart the TV, which can exit factory OSD menu.

5.2 Factory OSD Menu

The Factory OSD Menu comprises Factory Menu and Design Menu .

5.2.1、Factory Menu

Factory Menu

White Balance
Auto Calibration
LOGO
OSD Language
Country
Option
Factory Init
Test Pattern
Version:

White Balance

R DRV	13
G DRV	7
B DRV	16
R CUT	116
G CUT	120
B CUT	118
BRIGHT_H	80
CONTRAST _H	80
BRIGHT_L	40
CONTRAST_L	40

Auto Calibration

Auto Color	
Color Temp.	Standard
RED COLOR	116
GREEN COLOR	120
BLUE COLOR	118

LOGO

NULL
HISENSE
WELCOME

Option

SOURCE	TV
BRIGHT 0	10
BRIGHT 50	110
BRIGHT 100	132
CONTRAST 0	60
CONTRAST 50	125
CONTRAST 100	170
TOFAC	M
HDMI Cable	Standard
PIXSHIFTNUMBER	1
PIXSHIFTTIME	30

Factory Init

QingDao
HuangDao
Guiyang
Hungary
France
Austria
CLEAR PROTECTLY
CLEAR UNPROTECTLY

Test Pattern	Version
BLUE	Version: Panel Type: LG PDP32F1 (852*480) FLASH : EN25F80

5.2.2、Design Menu

Design Menu
Picture Mode Sound Mode Sound Settings Power Save PIP Option EMI MOVESHARPNESS LipSync

Picture Mode

Standard	**Brightness**	**50**
	Contrast	**50**
	Colour	**45**
Bright	**Brightness**	**60**
	Contrast	**60**
	Colour	**55**
Soft	**Brightness**	**45**
	Contrast	**45**
	Colour	**45**

Sound Mode

Standard	**120Hz**	**11**
	500Hz	**11**
	1.5KHz	**12**
	5KHz	**14**
	10KHz	**14**
Music	**120Hz**	**13**
	500Hz	**11**
	1.5KHz	**12**
	5KHz	**14**
	10KHz	**20**
Speech	**120Hz**	**6**
	500Hz	**9**
	1.5KHz	**14**
	5KHz	**14**
	10KHz	**14**

Sound Settings

VOLUME 0	**128**
VOLUME 1	**79**
VOLUME 20	**28**
VOLUME 40	**24**
VOLUME 100	**10**
TVPRE SCALER	**2**
VOLUME SCALER	**0**

NOTE: We advise service hadn't better amend factory data, because it is better settings data.

Please do not tell user the purpose password.

6. Software Upgrading

The software is upgraded by a burning tool- ISP_TOOL4.0.9, which can burn the program file *.bin to the main board of the unit

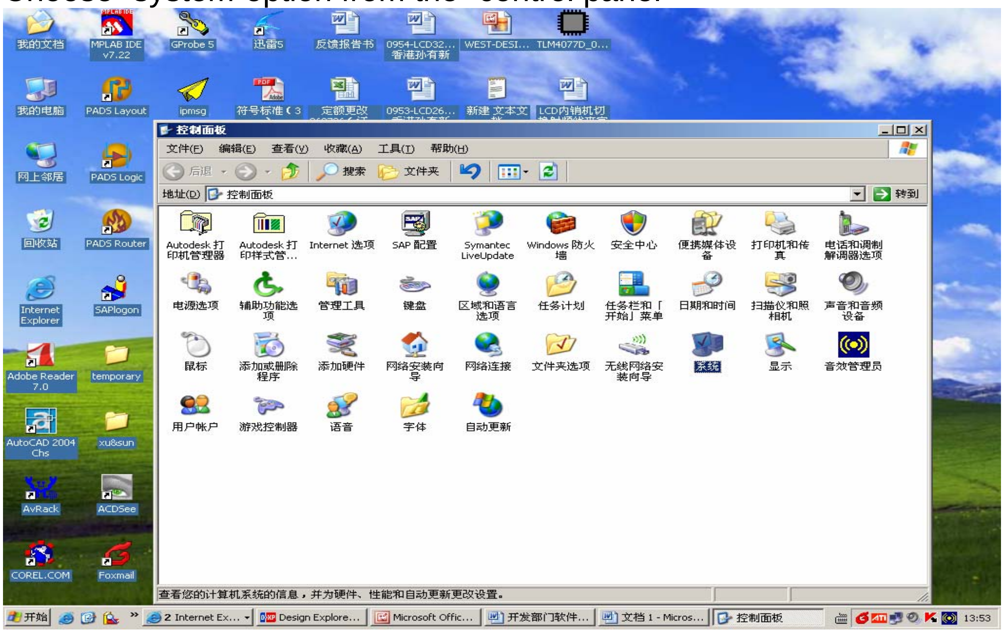
6.1 Get ready for upgrading

6.1.1 Install the ISP_TOOL4.0.9-------only for the first time update.

1、 Port Setting：



Choose "system"option from the "control panel"



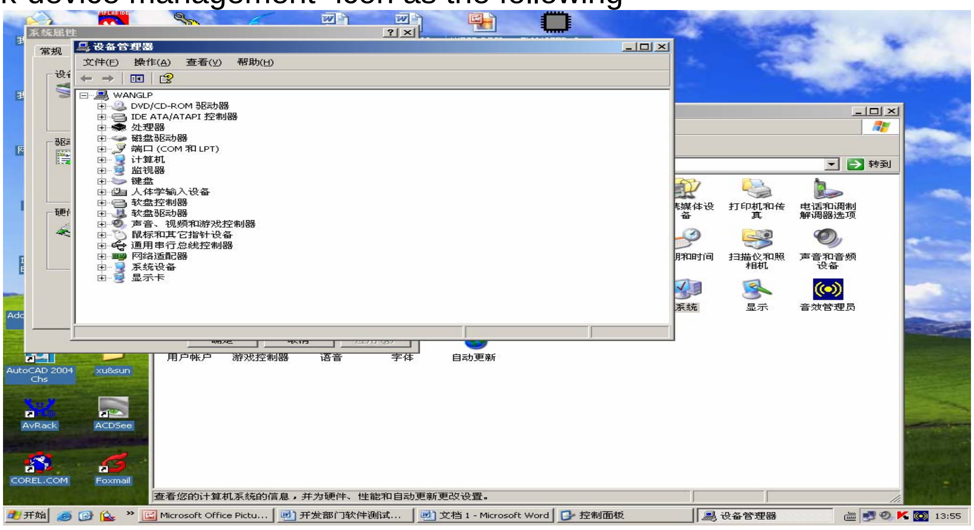
Click the "system" icon as the following



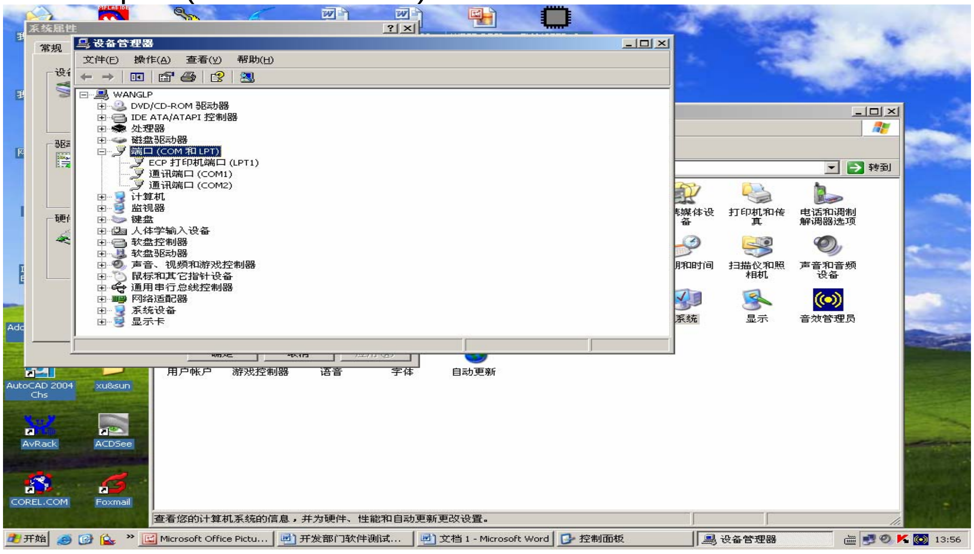
Choose the "hardware" option from the dialog window



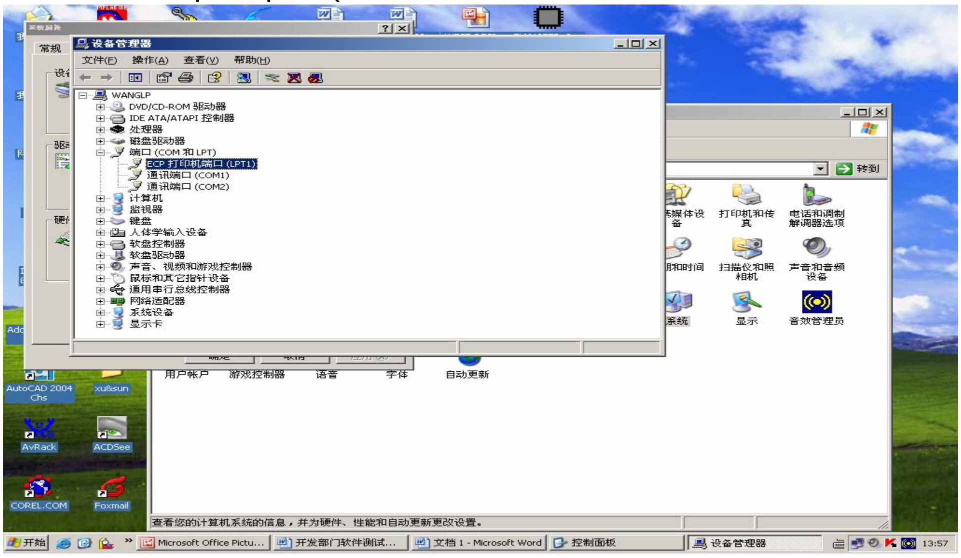
Click"device management" icon as the following



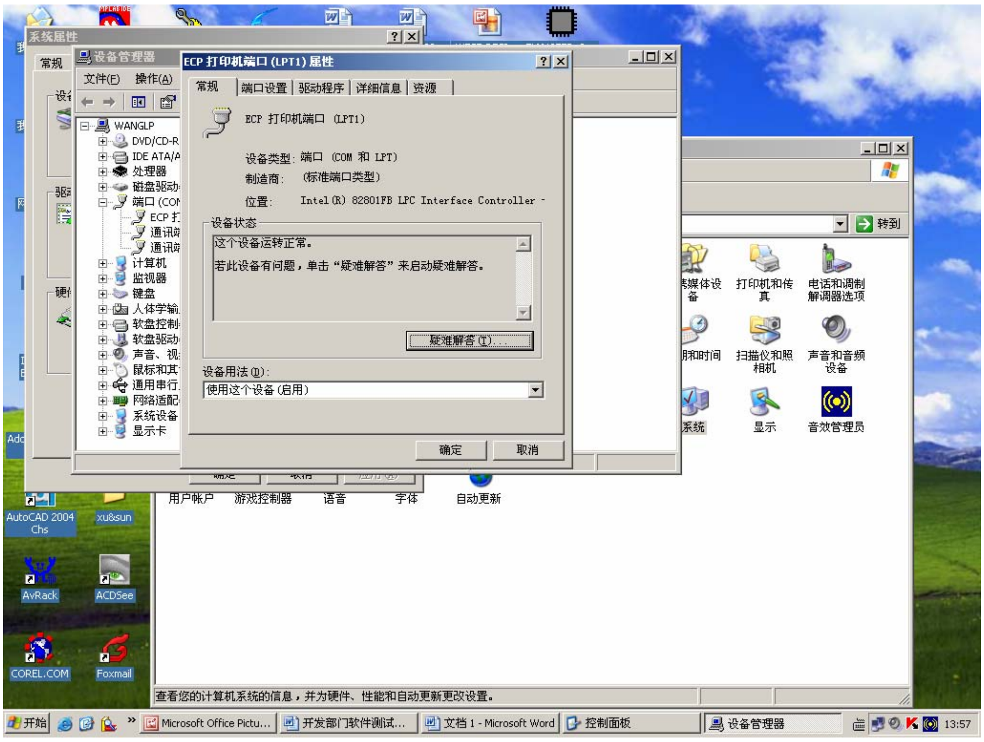
Choose the port (COM and LPT1)



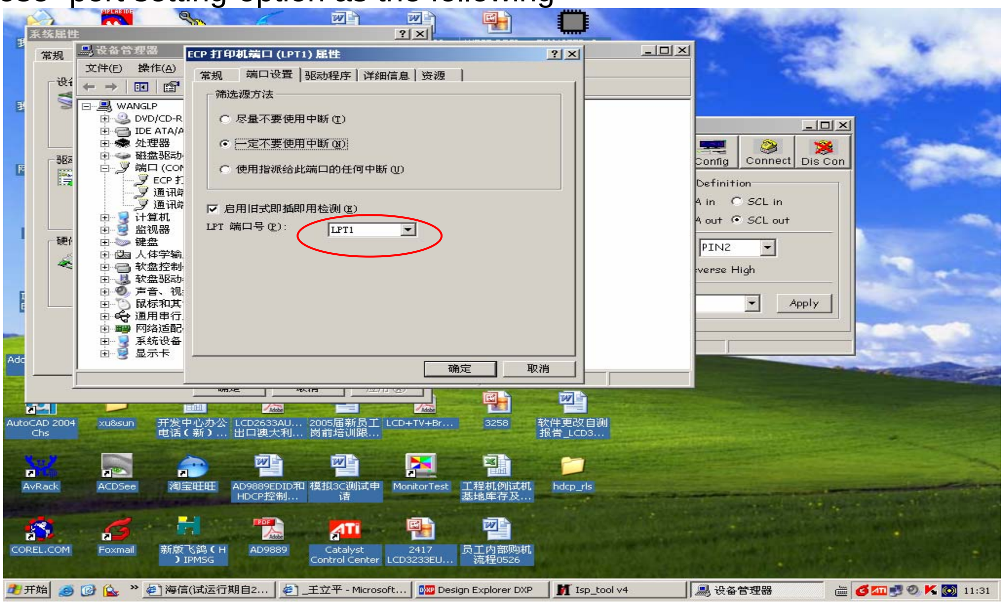
Choose the ECP print port (LPT1）



Click the port of print （LPT1）as the following



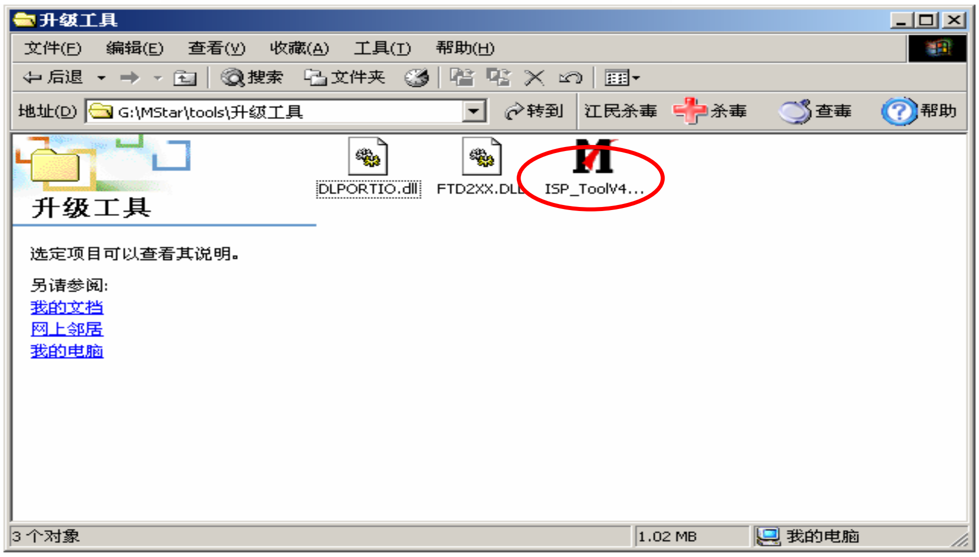
Choose "port setting"option as the following



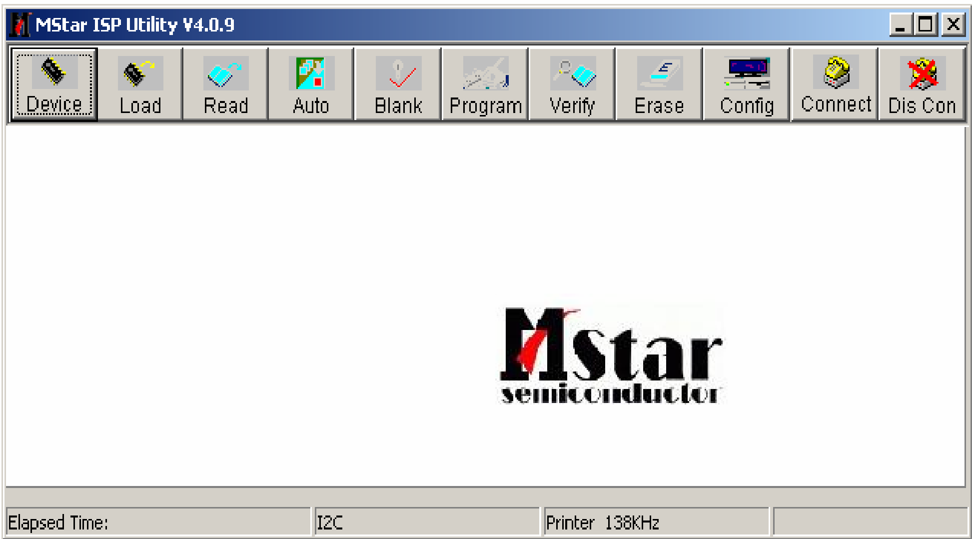
2、 Find the folder where the ISP_TOOL4.0.9 lies in.

There are three folders/files in this folder together.
DLPORTIO.dll and FTD2XX.DLL must be in the same folder

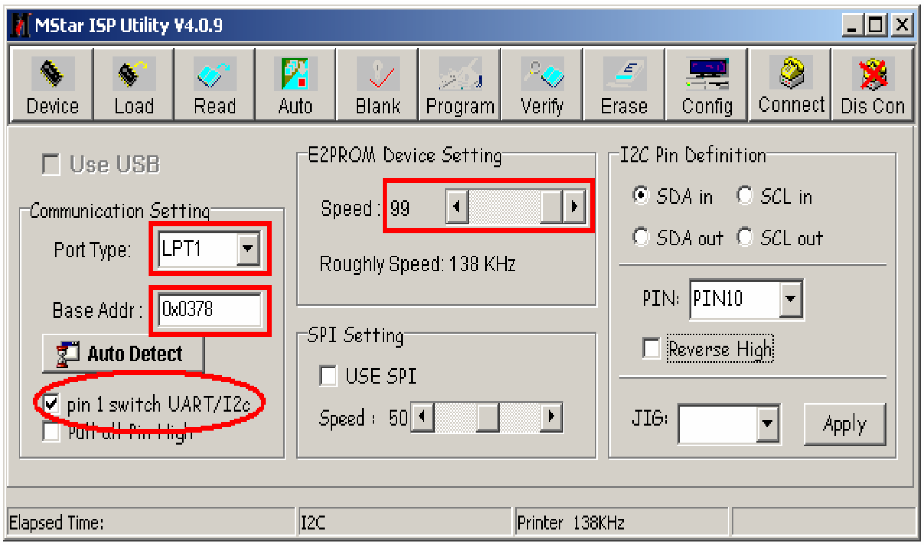




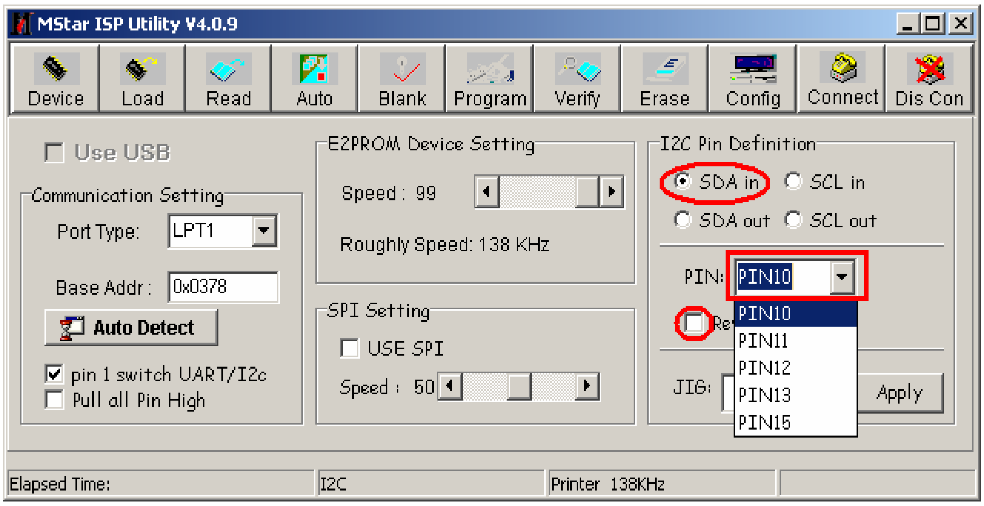
Double click the ISP_TOOL4.0.9 icon, and then a dialog window will show as below.



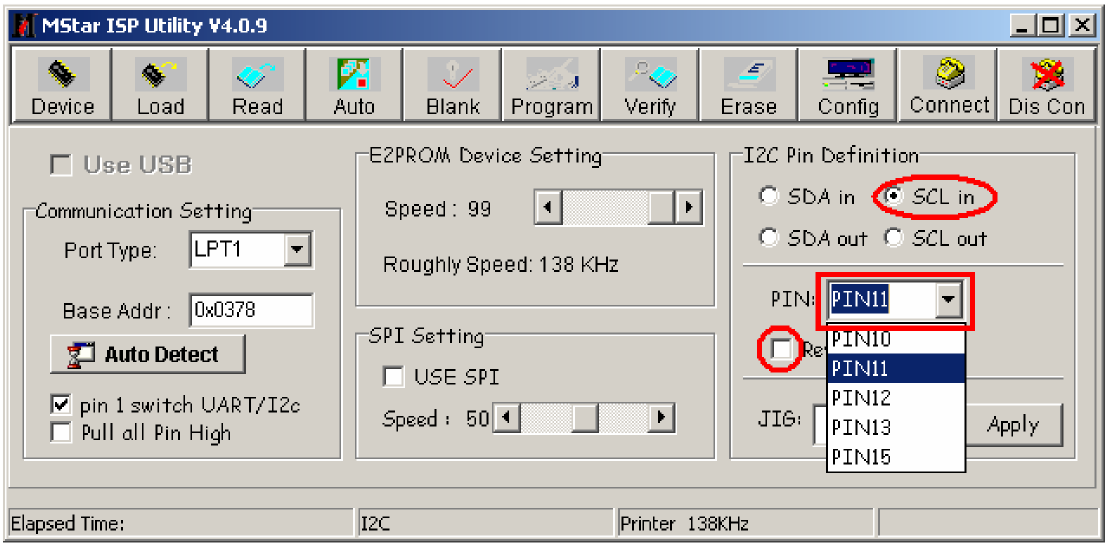
Click the **Config** button. And then a dialog window will show as below.
"Port Type" setting is LPT1
"Base Addr" setting is 0x378
Draw ✔ on the front of "pin 1 switch UART/I2c"
Speed setting is 99
As following



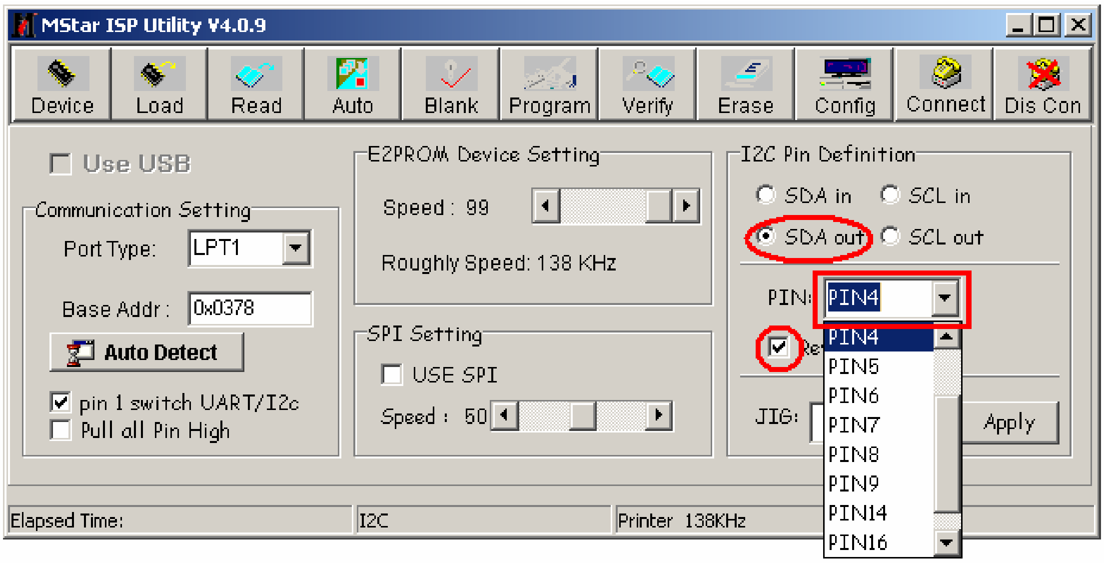
Choose“SDA in”and setting “PIN” is “PIN10”。
Notes:
Do not draw ✔ on the front of “Reverse High”。
As following



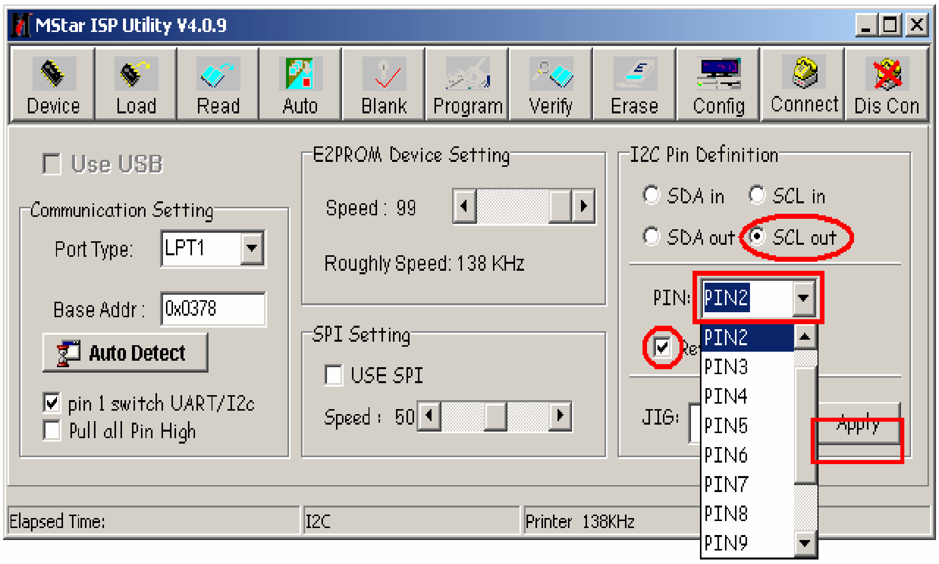
Choose “SCL in”and setting “PIN” is “PIN11”。
Notes:
Do not draw ✔ on the front of “Reverse High”。
As following



Choose “SDA out”and setting “PIN” is “PIN4”
Notes:
Draw ✔ on the front of “Reverse High”。
As following。



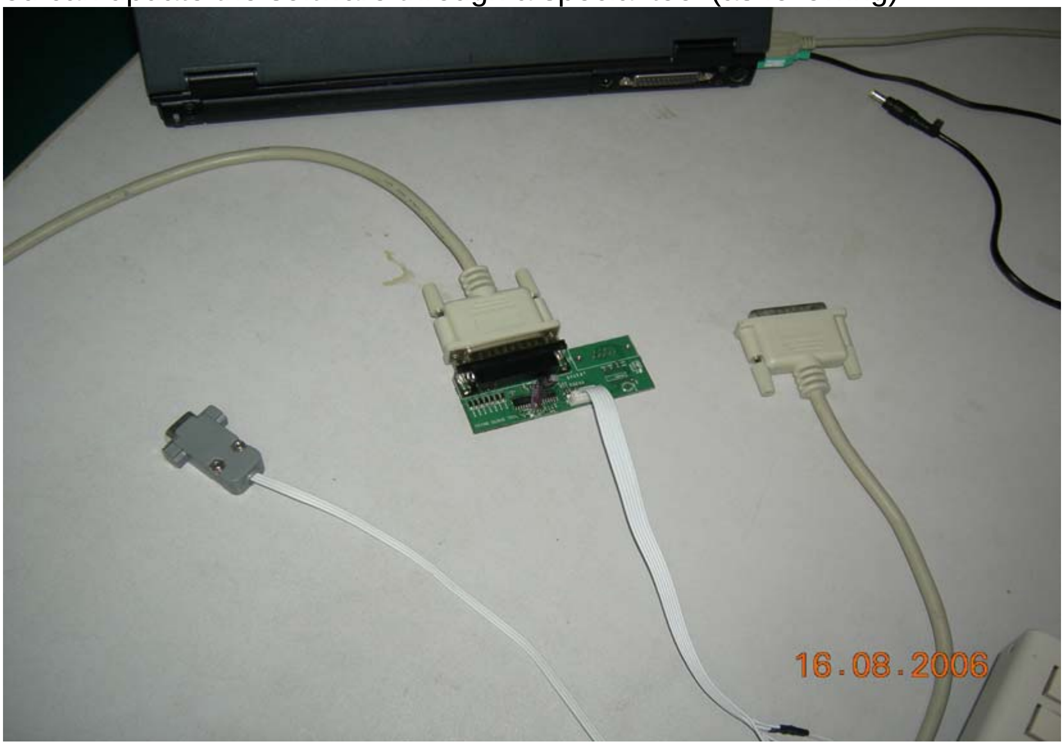
Choose “SCL out”and setting “PIN” is “PIN2”
Notes:
Draw ✔ on the front of “Reverse High”
As following



After having finished all above, clicking the "Apply "button to complete the configuration。

6.1.2 Hardware connecting

You can update the software through a special tool (as following)



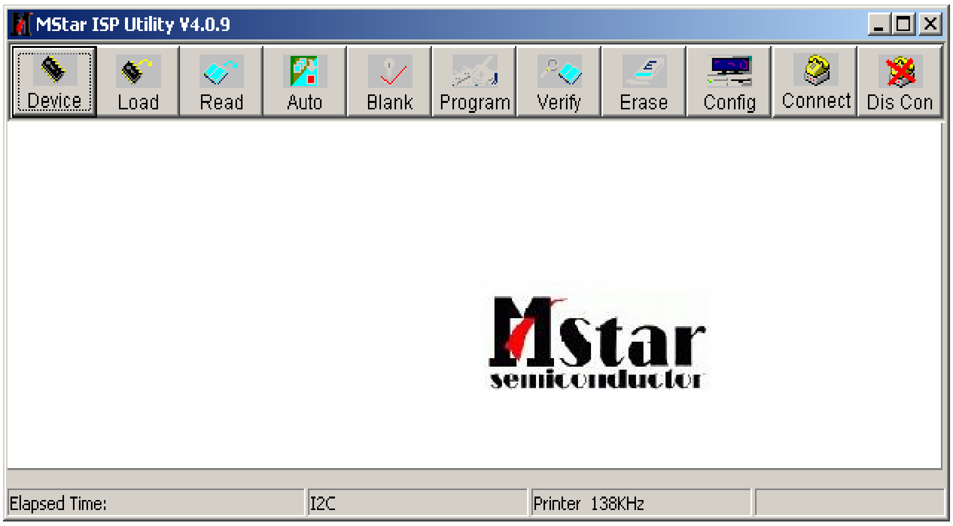
Connect the Debug board to the TV use VGA interface, the other parallel port to the computer, just as the following。


16.08.2006

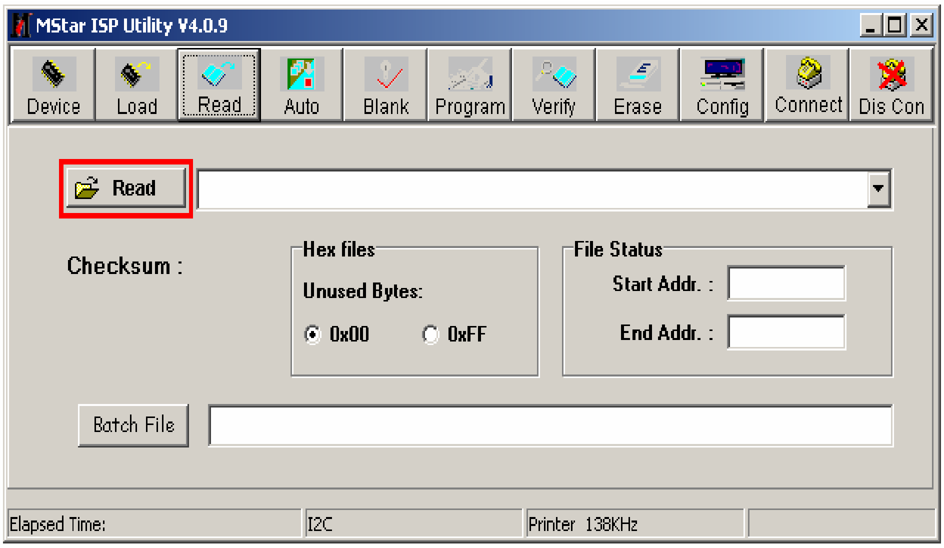


6.2 Upgrading with the ISP_TOOL4.0.9

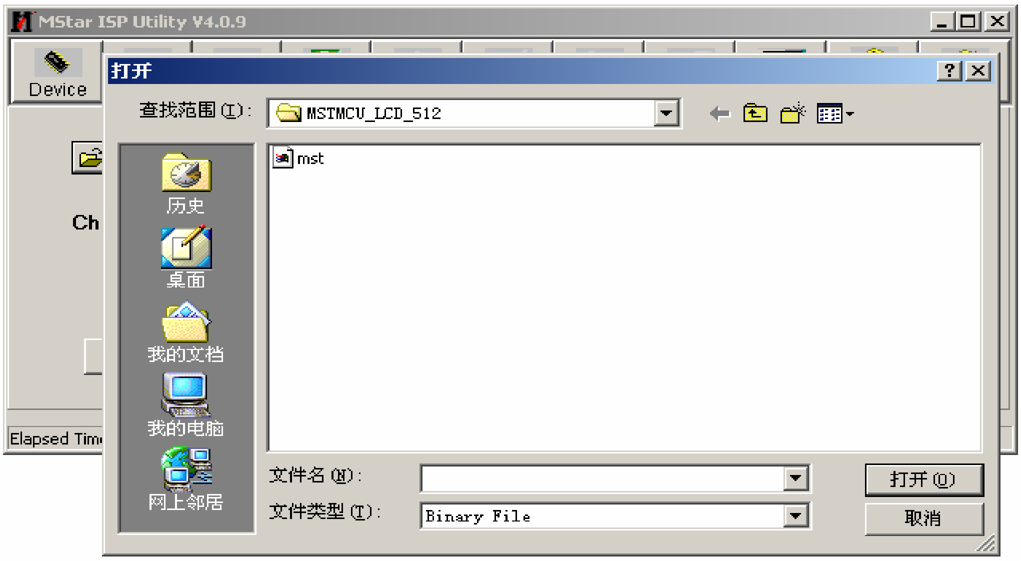
6.2.1 Double click the ISP_TOOL4.0.9 icon and a dialog window will show as following。

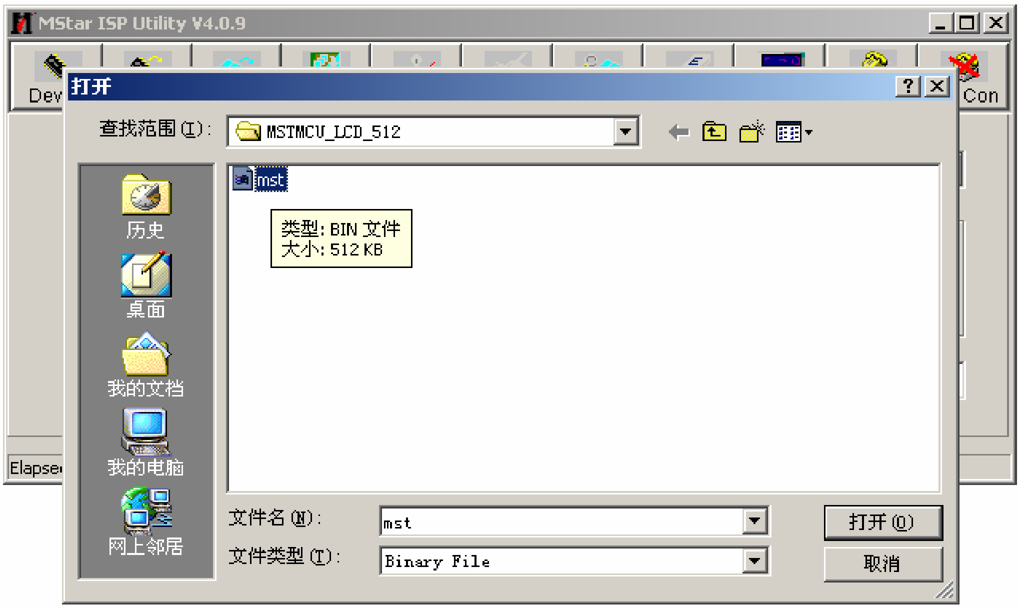


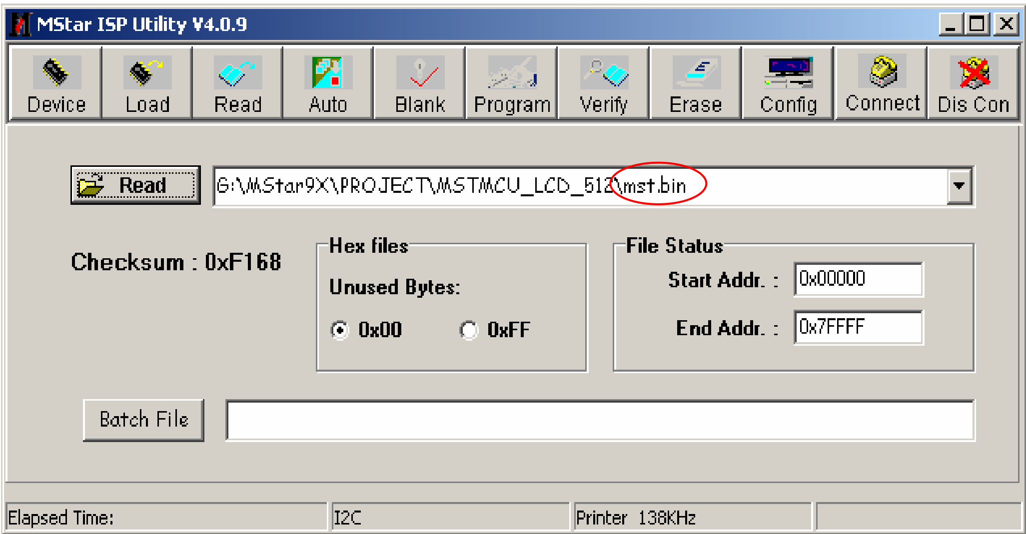
Click the"Read "button。



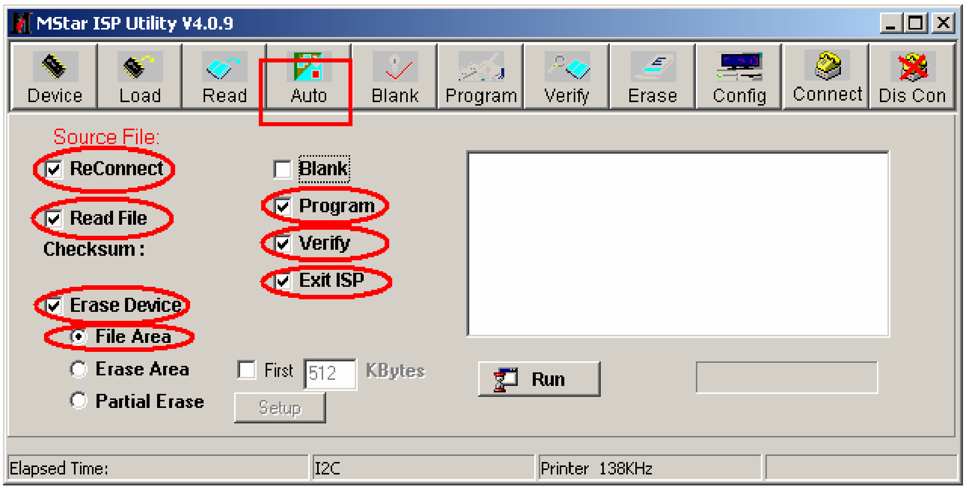
Choose the update file from the folder。



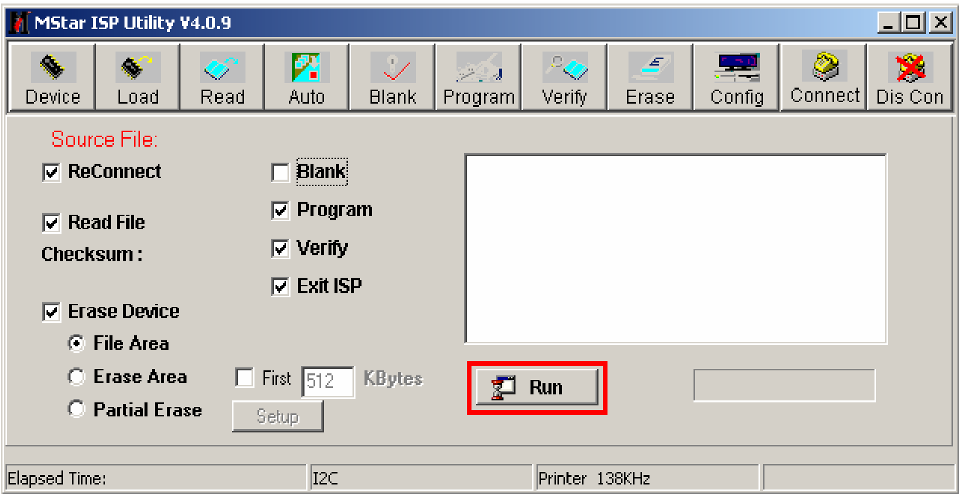




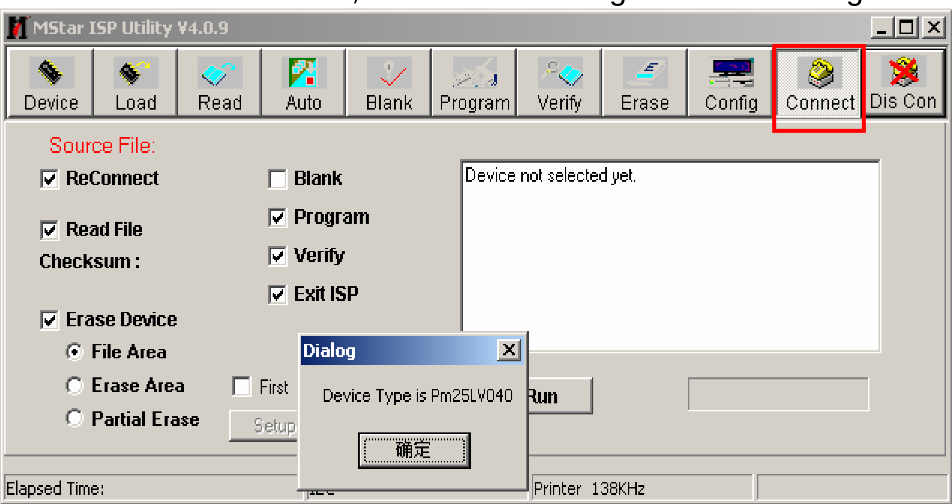
The update file has been chosen successfully。
Click the“Auto”button and choose parameters as following。

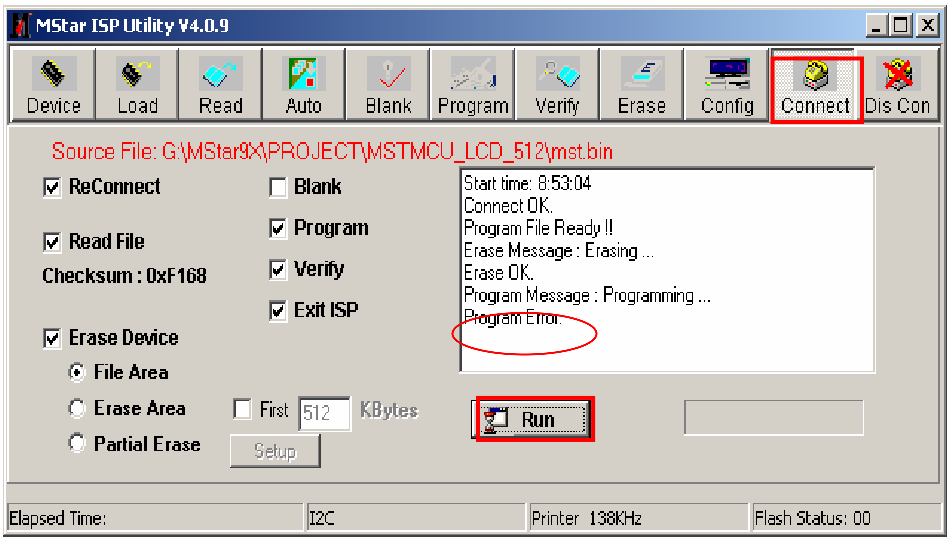


Click the“Run”button

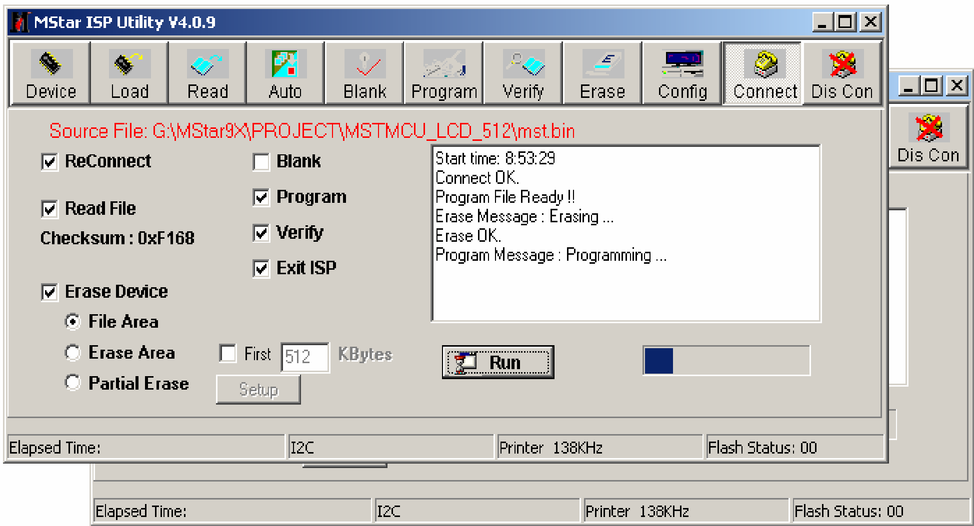


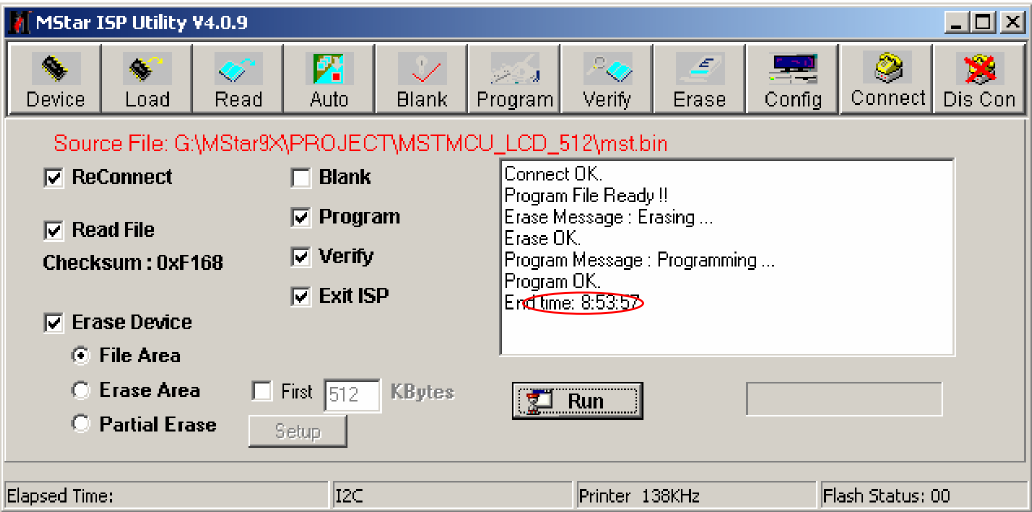
Click the“connect”button,then show a dialog box as following。





If show above then click the"Run"button again and again, till show the following dialog window。





The above appears on the screen-the word "program ok"shows in the information

displaying window,indicating upgrading is over。

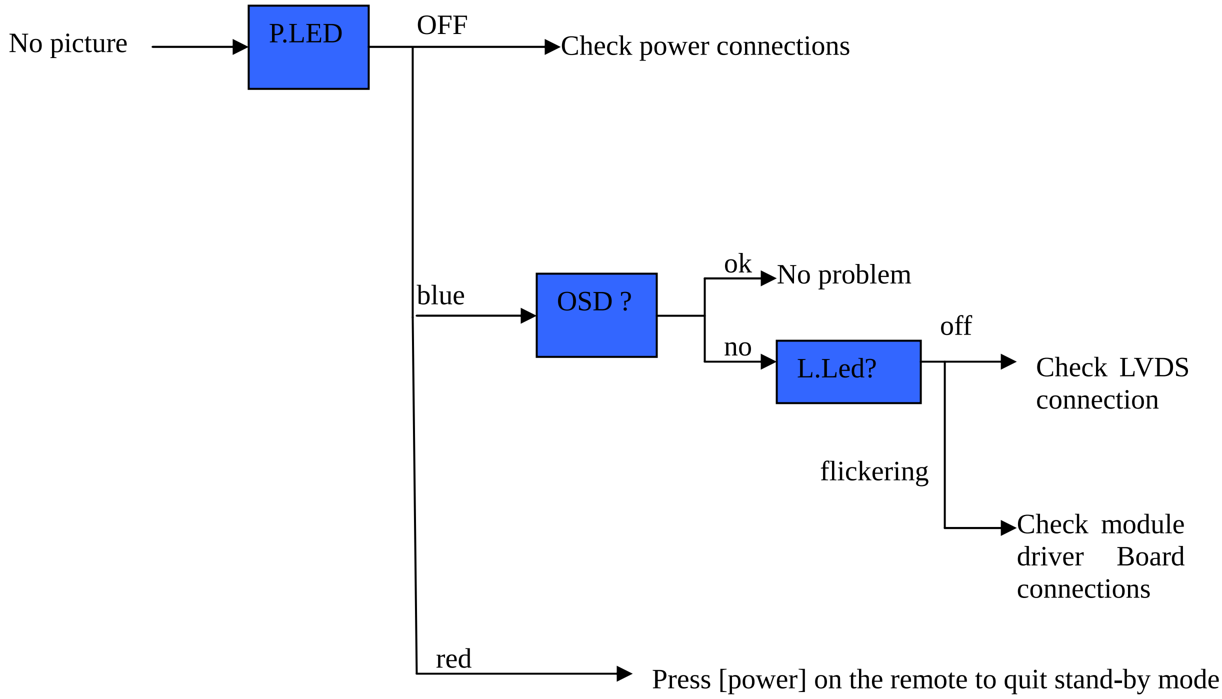
6.2.2 After the update is over. Must Confirm the software Version in the Version Menu.

If the update is successful, enter Factory Init Menu and select “Clear Unprotectly”

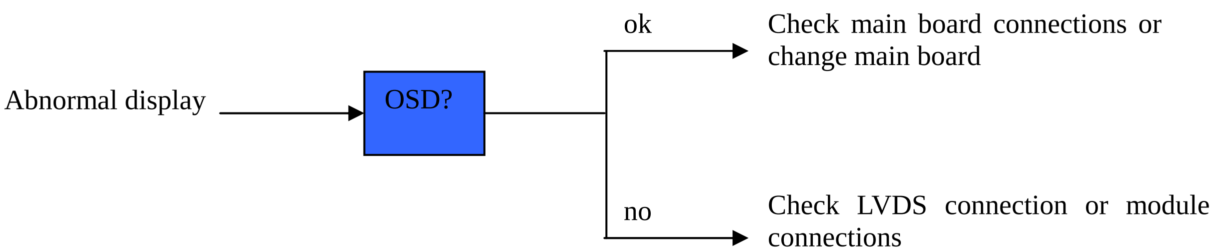
a. Press VOL+ button to clear the EEPROM data.
b. When the “Clear Unprotectly ” button becomes white, turn off the power.
c. Restart the TV.

7. Troubleshooting

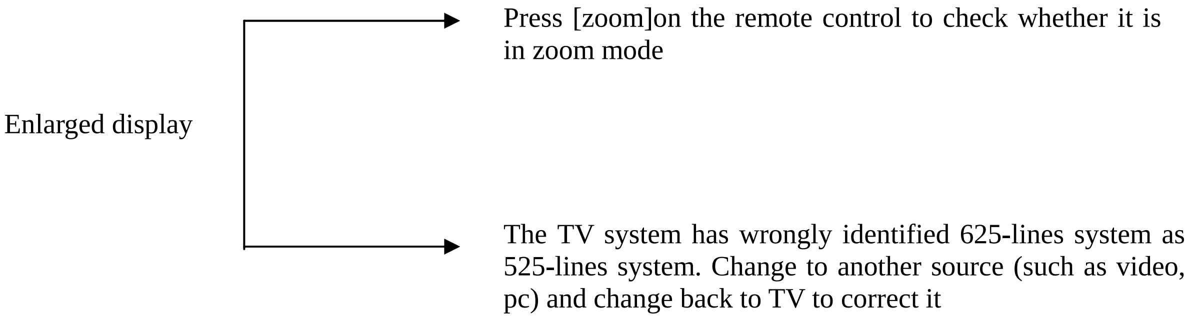
7.1. No picture



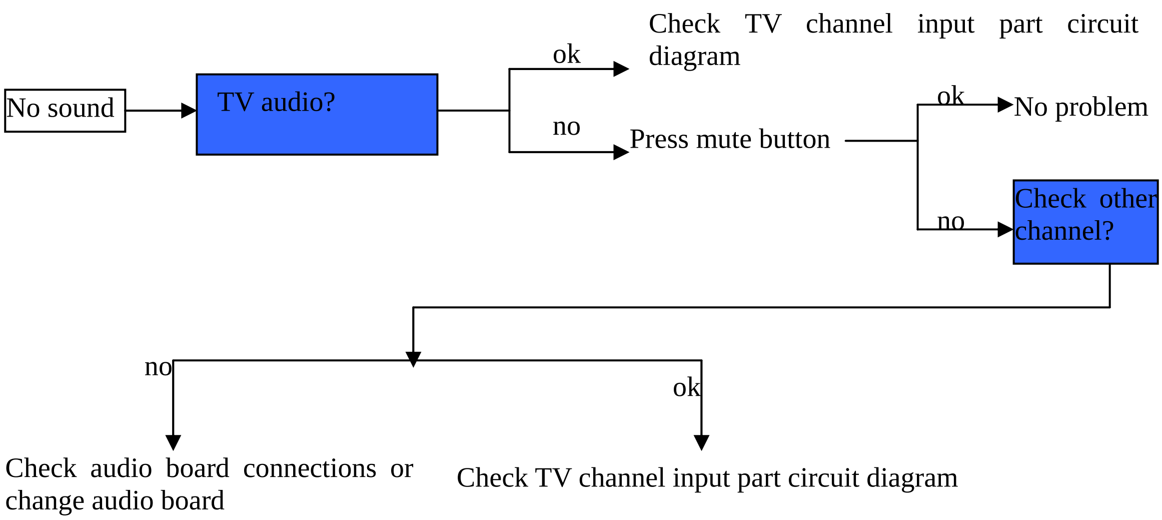
7.2. Abnormal display



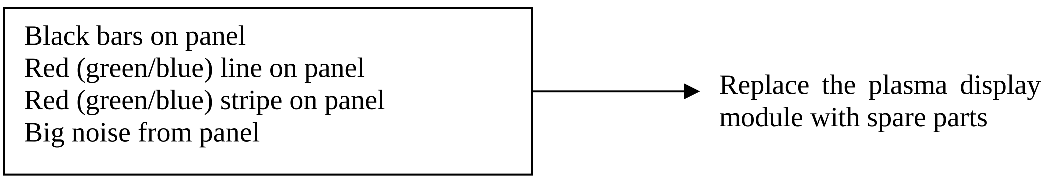
7.3. Enlarged display



7.4.No sound



7.5. panel problems



Note:

p.LED?

Power indicator at the centre of the front panel. Normal state : blue; remote command state: blue flickering.

L.LED?

LVDS indicator on the logic processing board. Normal state: yellow flickering.

OSD?

Press [MENU] to display menu on the screen.

7.6 Problem solutions:

1. Adjusting sharpness can improve picture definition.
2. Adjusting bright can improve picture administrative levels, it can display black background something.
3. If VGA or YPBPR color isn't natural. You can optimize VGA.
4. PDP power is very large system. As you power off power. Power component must discharge period of time. Power can work steadily. If you power off and power on TV continuously. Then power work unsteadily. Then PDP TV will display deviant picture.
5. TV, AV and S.video are the same white balance setting. VGA is a set white balance setting. HDTV is a set white balance setting.
6. Picture mode does be divided four modes. such as standard, brightness, soft and custom. If you adjust factory data, they will increase the same data.
7. If TV don't work normally, it will take place follow some phenomena.

No.	Trouble	Measure
1	Turn on the TV, The LED is red, no display on screen	Replace the main board or updating the software.
2	Turn on the TV, The LED is blue, but no picture or/and no sound	You should to replace the main board.
3	In TV state, can not to tuning	You should to replace the main board.
4	No teletext	You should to replace the main board.
5	No sound	You should to replace the main board.
6	can not to updating software	You should to replace the main board
7	No reaction with PC	You should change the main board

8. If the picture color is not correct in the scart1 RGB source, but the scart1 CVBS is normal .you can check the fast blank signal is whether high. If it is low, please check the circuit.
9.If the picture is not normal 16:9 mode or 4:3 mode when the signal equipment send 16:9 mode or 4:3 mode, please check the aspect mode whether is in "normal" mode.

8.Stand installing

Assemble instruction

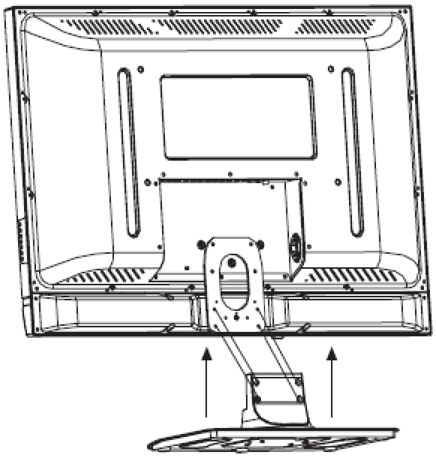
Mount Installation

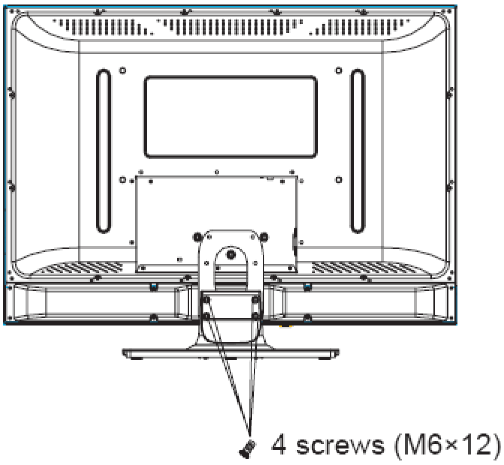
Mount Preparation

Should you choose on-the-table watching mode, please install the base following the below steps:

1. Spread cloth (or other soft materials) on one smooth surface which can support enough pressure, to avoid damaging TV screen.
2. Lay this unit stably with screen downside.
3. Take out the base and assemble it with four screws (M6×12) as illustrated.

NOTE: Failure to do so may result in breaking, denting and scratching the plasma display.



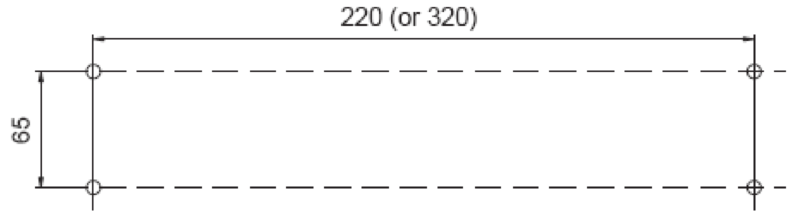


9 PDP Wall-mounting Bracket Installation Guide

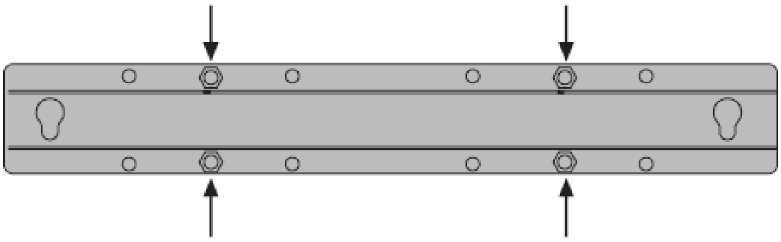
Wall bracket installation instruction

If the user need wall bracket means, please install it as follows:

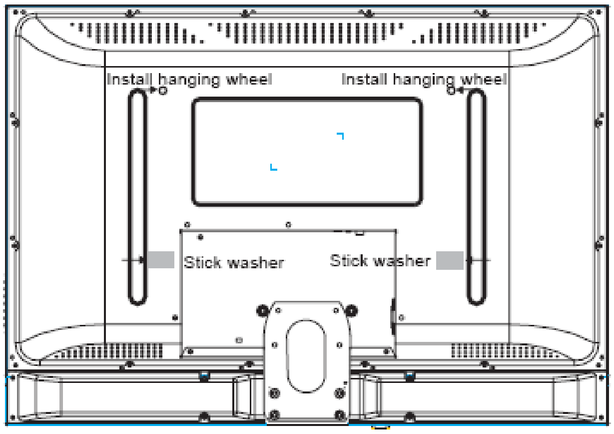
1. Drill the holes by the size as illustrated (220×65 or 320×65) and insert the expansive bolts (M8×70).



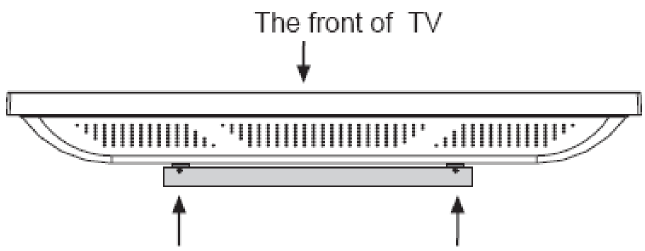
2. Fix the expensive bolts onto the wall bracket.



3. Install 2 hanging wheels onto the back cover, and stick 2 washers onto the positions as illustrated.
   Attention: Please do not hang the TV with the two bottom holes only!



4. Hang the whole unit with hanging wheels on the fixed wall bracket, at the top of which was tightened with screws M4x35 to avoid the accidental fall of the whole unit off the wall bracket.



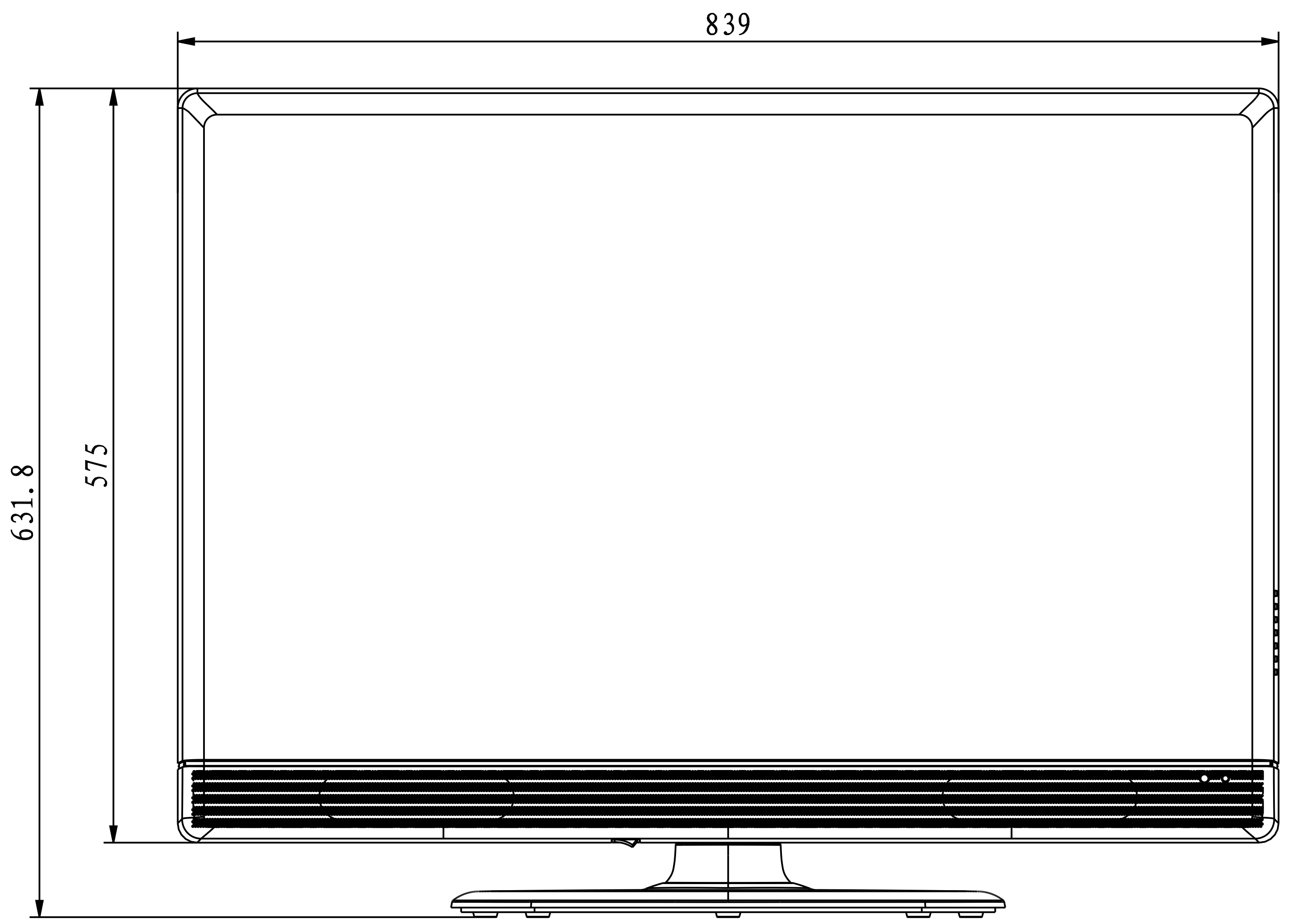
Attentions:

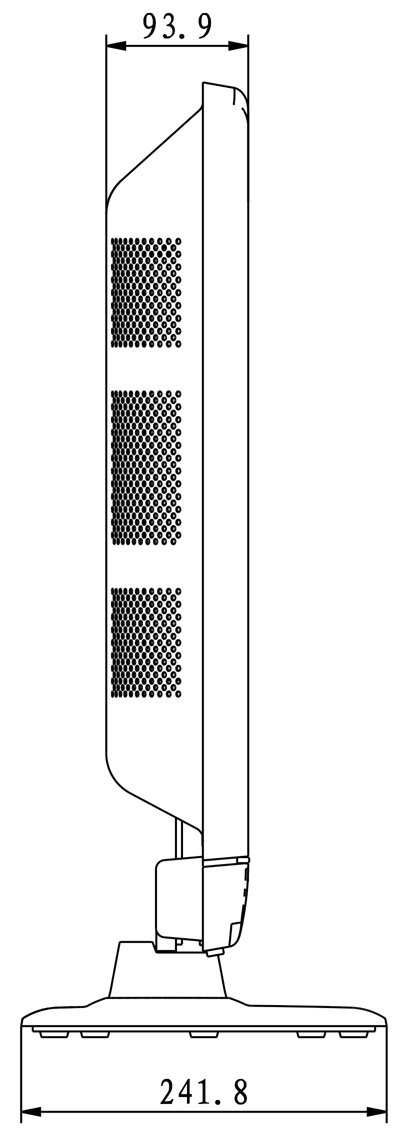
1. **Do not attempt to install the TV by yourself. Refer all installation to qualified servicing personnel.**
2. **Do not install the TV on a sloping wall that makes the TV screen slant over 10 degrees from the vertical or it may tumble.**
3. **Before installation, examine whether the wall conforms to the specifications and whether the supplied parts can be fixed to it. e.g. cement wall or brick wall. Do not attempt to install the TV on a flexible wall such as sheetrock wall or plaster wall, etc. If the rigidity of the wall can not be measured, every mounting hole should sustain axial normal stress over 100N and shearing stress over 200N.**
4. **Use the provided spare parts to fix. Do not change the screw specifications at will.**
5. **Drilling in the wall should be carried out as required and the drilling holes should conform to the specifications. (Stipulated in the installation steps.) Otherwise, it may cause hidden danger.**
6. **To avoid fire and shock, do not place a radiator, heater or humidifier, etc. below the installed TV.**
7. **The TV should be kept away from moisture, sensors and power line. Or it may cause electric conduction, the electric shock or the resonating accident.**
8. **Do not install the TV in the place where there are other power input and where it is easy to crash, or produces vibration.**
9. **After the whole unit has been installed well, do not put any external force onto the whole unit to avoid the fall of it.**
10. **Make sure the power is cut off before installation; during the installment, keep the screen from hard objects or other sharp ones.**
11. **If you want to move this unit after installation, please contact the professional technicians.**

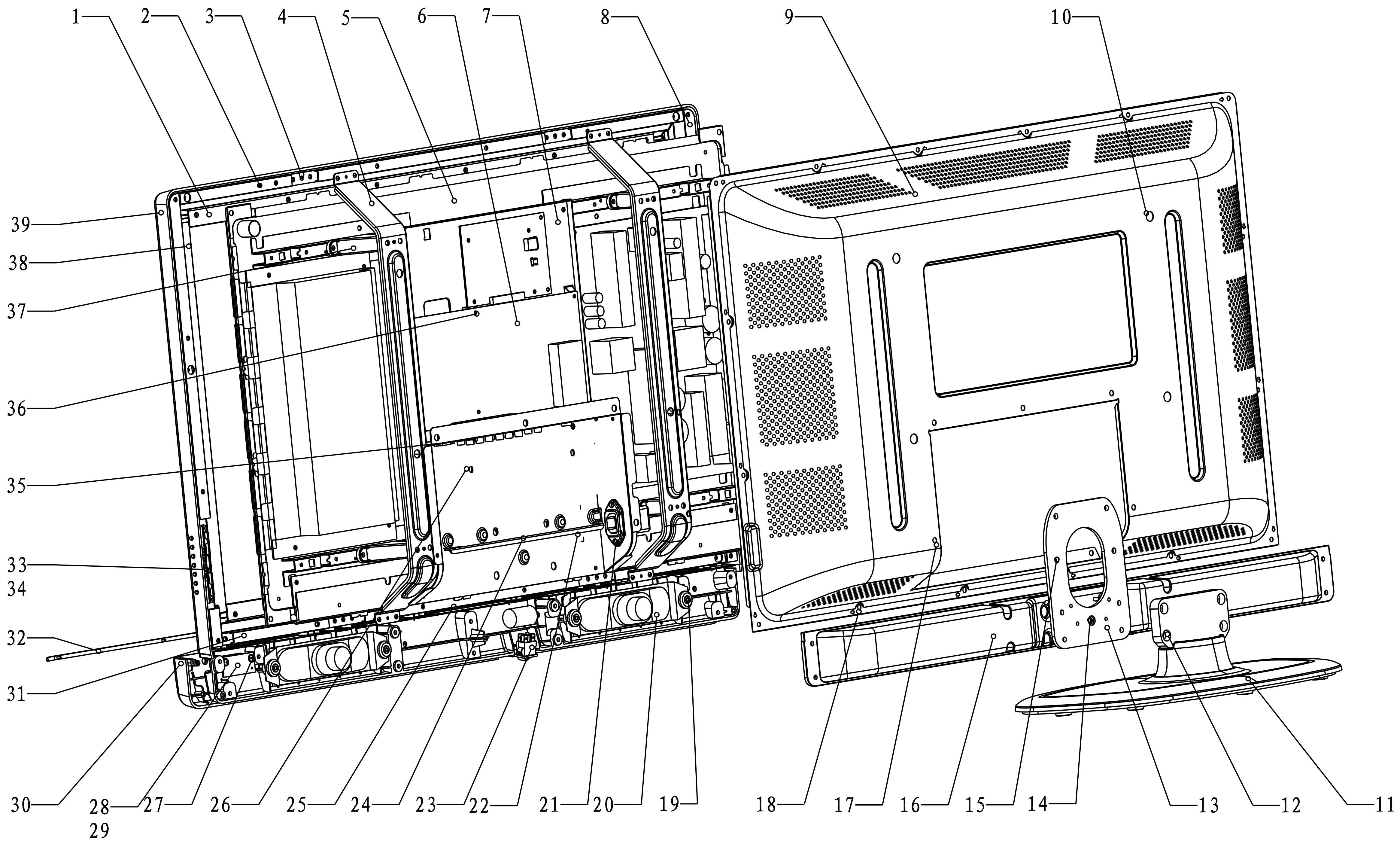
10. Explode View and BOM

11 Schematic circuit diagram

RSAG2. 025. 1045 BZ







序号	名　称	数量	代　　号	备　注
39	front cover	1	RSAG8. 074. 528	
38	bracket	2	RSAG8. 038. 1319	
37	bracket	1	RSAG8. 038. 1151	
36	screw	6	SJ2836-87 M3X8镀锌银白\ROH\STD	
35	screw	2	SJ2825-87 ST3X12C黑色\ROH\STD	
34	key	1	RSAG8. 335. 074\B2	
33	key board	1	RSAG2. 908. 1118\ROH	
32	ornament	1	RSAG8. 647. 275\电镀	
31	bracket	1	RSAG8. 038. 1318	
30	panel	1	RSAG8. 081. 368\B2\Z0	
29	lens led	1	RSAG8. 640. 059\ROH	
28	Led&IR Board	1	RSAG2. 908. 1244	
27	screw	4	SJ2824-87 ST3X10C镀锌银白\ROH	
26	scutcheon	1	RSAG8. 804. 3109	
25	bracket unit	1	RSAG6. 150. 337	
24	bracket unit	1	RSAG6. 150. 338	
23	Power switch	1	PS8-12-D-047B/BB\ROH	
22	scutcheon	1	RSAG8. 804. 371\ROH	
21	screw	2	GB/T819. 1-2000 M3X8黑\ROH\STD	
20	speaker	2	YDT415E-10W4R-F	
19	screw	4	SJ2838-87 ST4X16C. II镀锌银白\ROH\ST	
18	screw	24	SJ2824-87 ST4X16C黑色\STD	
17	screw	25	GB/T818-2000 M4X8(黑)\ROH\STD	
16	screw	8	GB818/2000-T M5X12黑\STD	
15	sound_back	1	RSAG7. 013. 103\Z0	
14	screw	1	SJ2824-87 ST4X20C黑色\STD	
13	bracket	1	RSAG8. 038. 1328\hp黑	
12	screw	4	GB/T 818-2000 M6X12黑色\ROH\STD	
11	pedestal	1	RSAG8. 071. 054	
10	screw	4	SJ2836-87 M6X12. III\黑色	
9	back cover	1	RSAG8. 074. 529 \hp黑	
8	bracket	1	RSAG8. 038. 1316	
7	bracket	1	RSAG8. 038. 1132	
6	Main Board	1	RSAG2. 908. 1099-3	
5	PDP module	1	PDP32F13	
4	bracket unit	2	RSAG6. 150. 336	
3	screw	20	SJ2824-87 ST4X12F黑色	
2	bracket	1	RSAG8. 038. 1317	
1	bracket	2	RSAG8. 038. 1327	

更改标记	数量	更改单号	签名	日期	PDP32V69 爆炸图	RSAG2. 025. 1045 BZ
设　计						阶段标记 / 质　量 / 比　例
审　核						1: 5
工　艺						第 1 页　共 1 页
标准化						青岛海信电器股份有限公司
批　准						

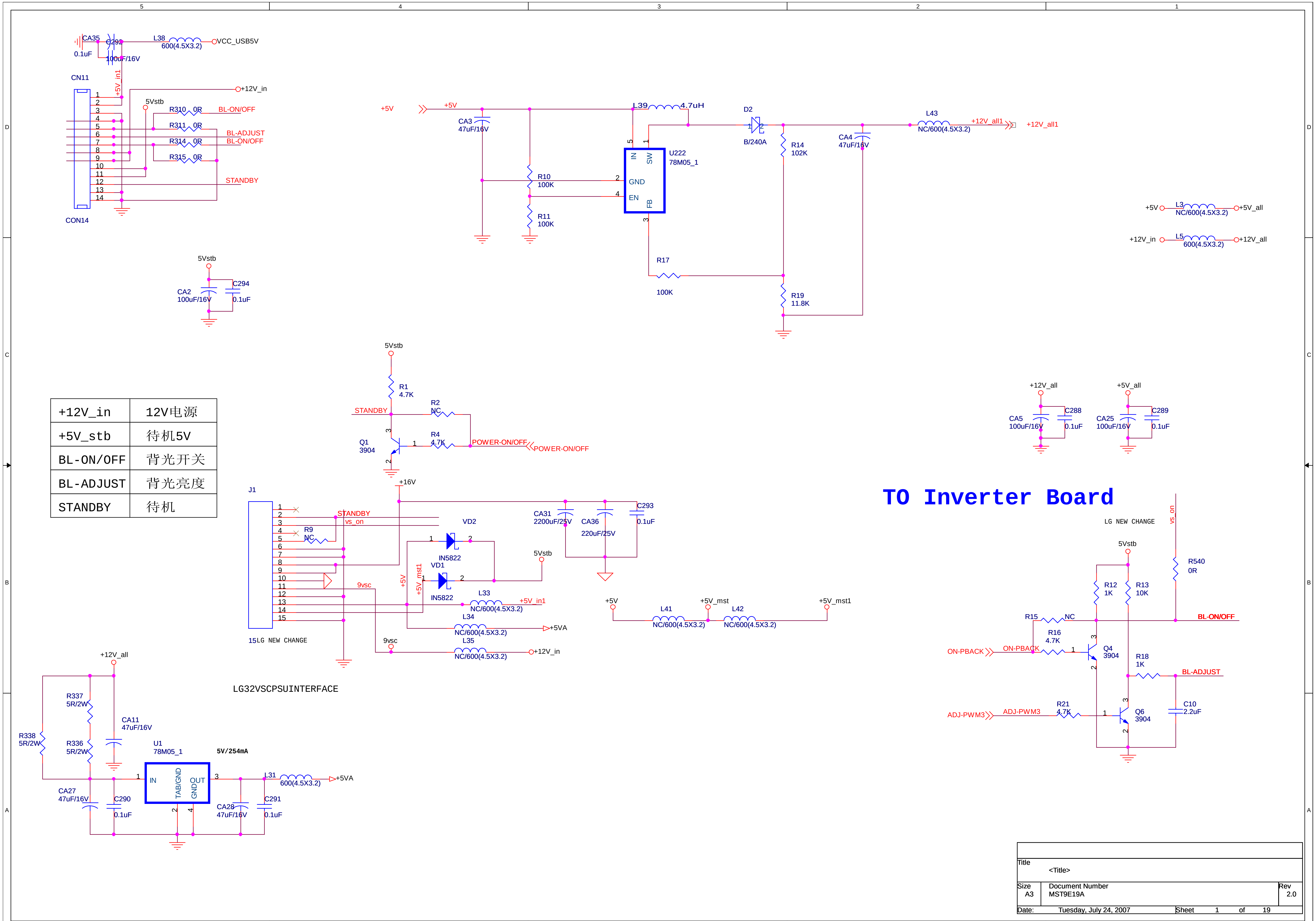
媒体编号

旧底图总号

底图总号

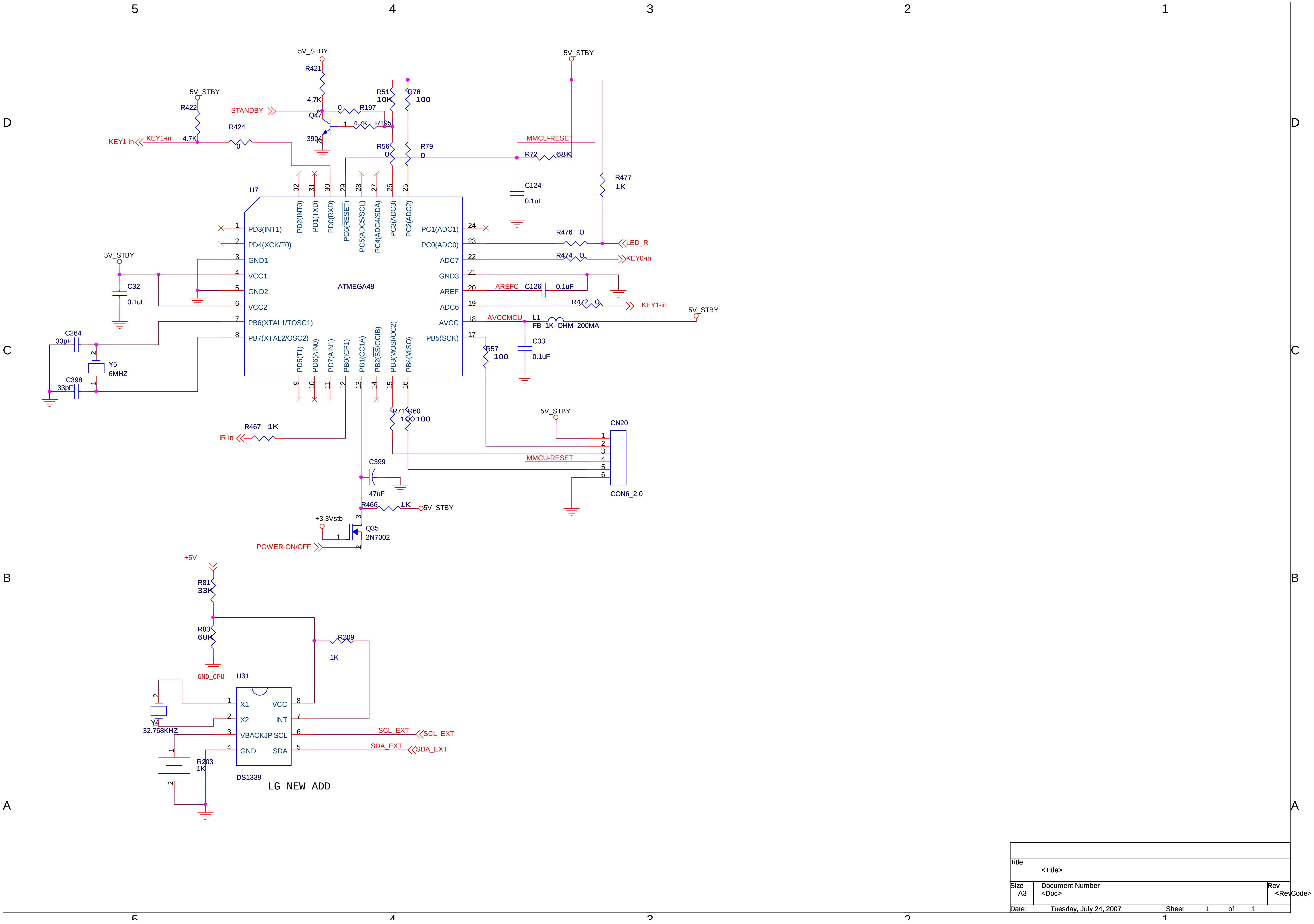
日期　签名

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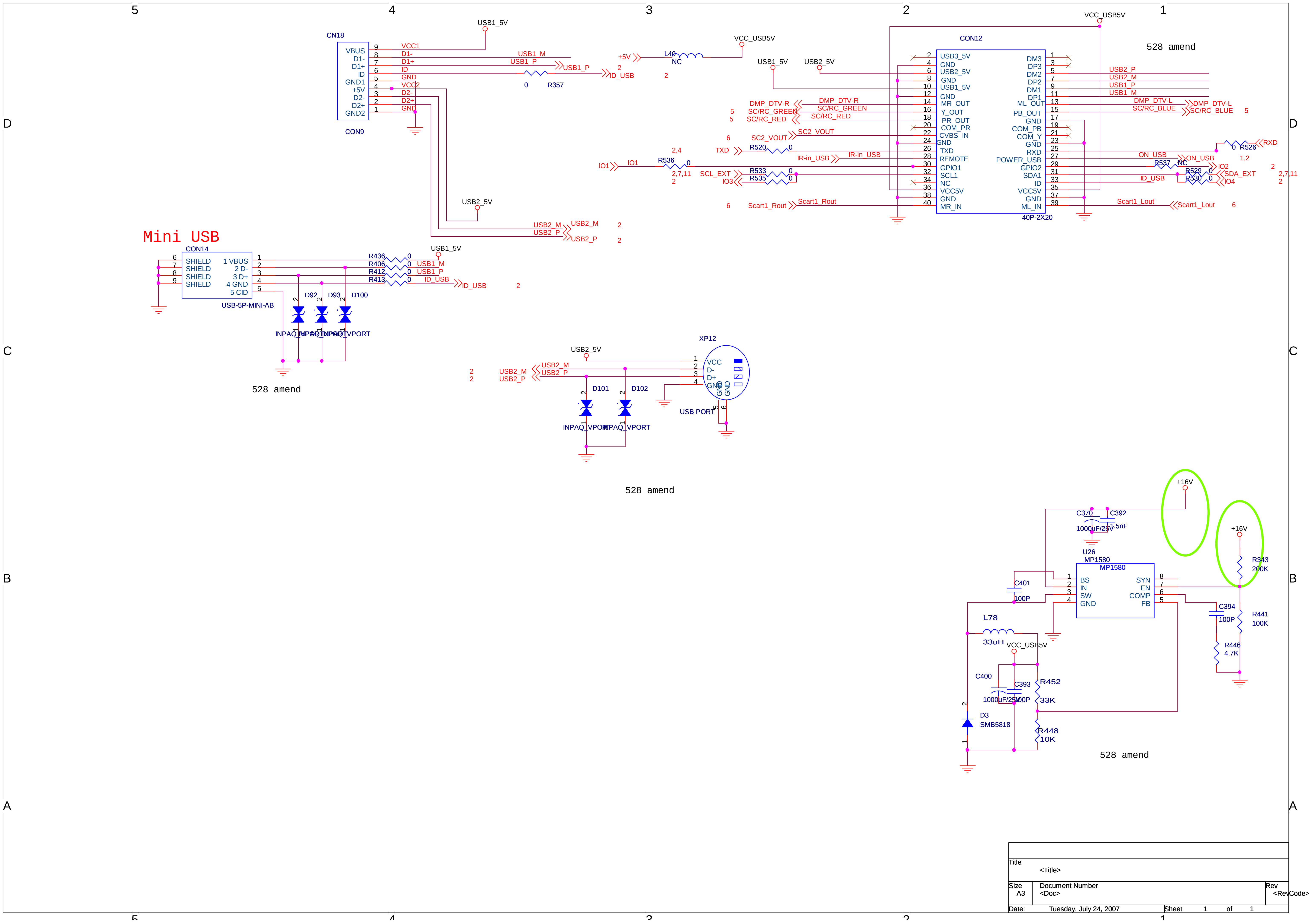


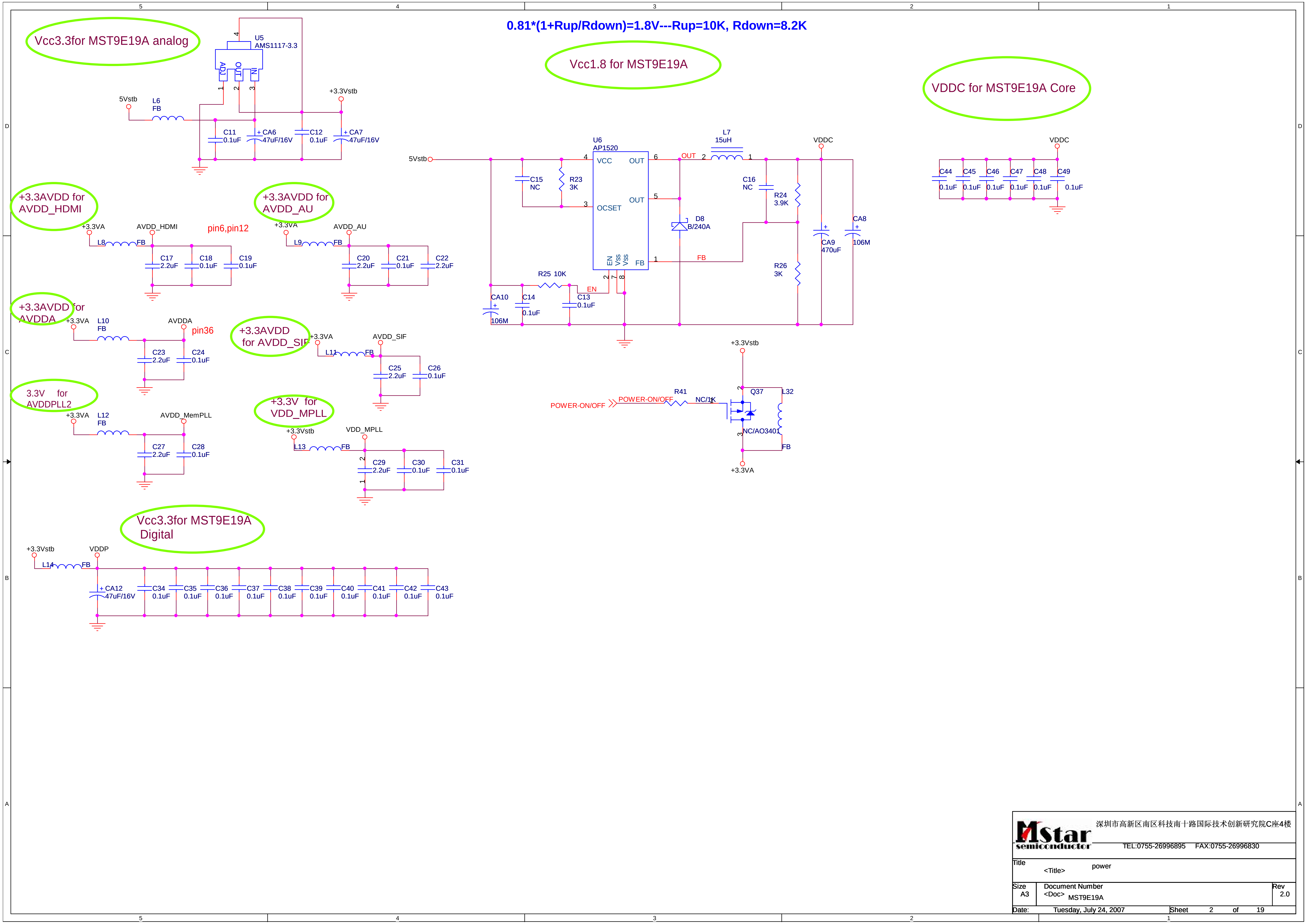
+12V_in	12V电源
+5V_stb	待机5V
BL-ON/OFF	背光开关
BL-ADJUST	背光亮度
STANDBY	待机

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Size A3	Document Number MST9E19A	Rev 2.0
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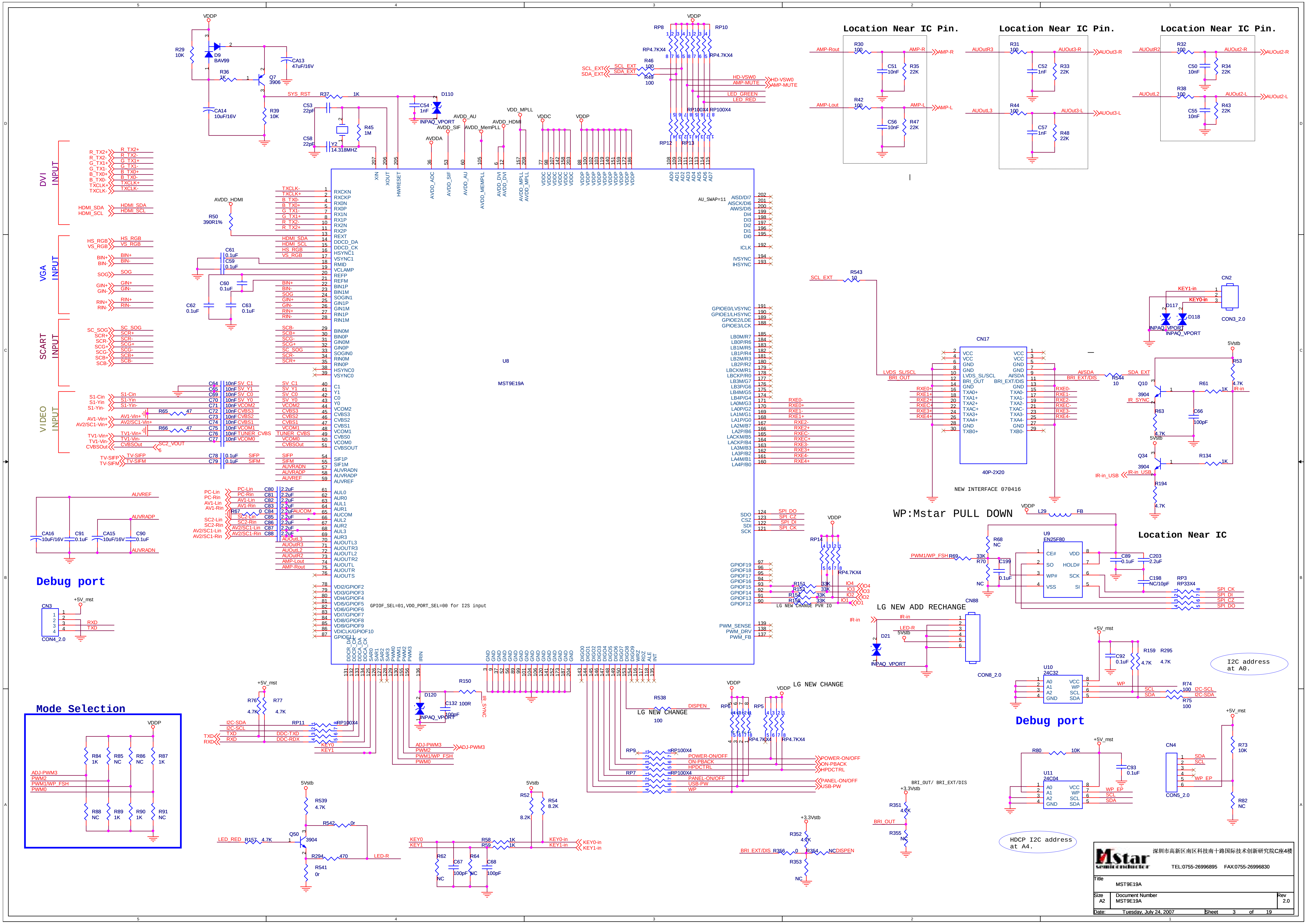


5V_STBY
R421
4.7K
STANDBY
0 R197
Q47
3904
1 4.7K R195
R51 10K
R78 100
R56 0
R79 0
MMCU-RESET
R72 68K
C124 0.1uF
R477 1K
5V_STBY
R422
4.7K
R424 0
KEY1-in
U7
ATMEGA48
PD3(INT1)
PD4(XCK/T0)
GND1
VCC1
GND2
VCC2
PB6(XTAL1/TOSC1)
PB7(XTAL2/OSC2)
PD2(INT0)
PD1(TXD)
PD0(RXD)
PC6(RESET)
PC5(ADC5/SCL)
PC4(ADC4/SDA)
PC3(ADC3)
PC2(ADC2)
PC1(ADC1)
PC0(ADC0)
ADC7
GND3
AREF
ADC6
AVCC
PB5(SCK)
PD5(T1)
PD6(AIN0)
PD7(AIN1)
PB0(ICP1)
PB1(OC1A)
PB2(SS/OCIB)
PB3(MOSI/OC2)
PB4(MISO)
R476 0
LED_R
R474 0
KEY0-in
AREFC C126 0.1uF
R472 0
KEY1-in
AVCCMCU L1 FB_1K_OHM_200MA
C33 0.1uF
R57 100
C32 0.1uF
C264 33pF
C398 33pF
Y5 6MHZ
R467 1K
IR-in
R71 100
R60 100
5V_STBY
CN20
CON6_2.0
MMCU-RESET
C399 47uF
R466 1K
+3.3Vstb
Q35 2N7002
POWER-ON/OFF
+5V
R81 33K
R83 68K
GND_CPU
R209 1K
U31
X1
X2
VBACKJP
GND
VCC
INT
SCL
SDA
DS1339
Y4 32.768KHZ
R203 1K
SCL_EXT
SDA_EXT
LG NEW ADD
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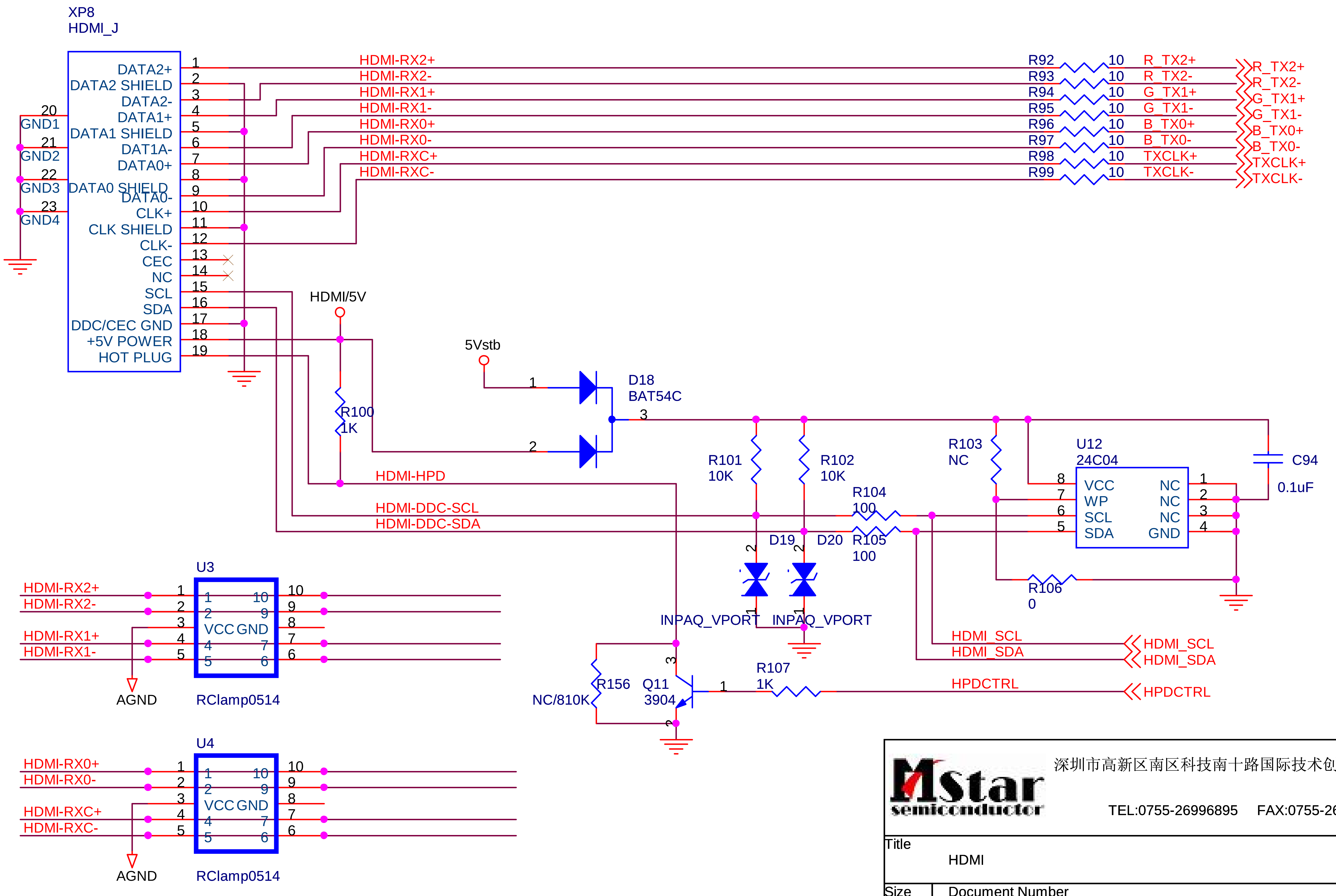

Mini USB
528 amend
528 amend
528 amend
528 amend
CN18
CON9
VBUS
D1-
D1+
ID
GND1
+5V
D2-
D2+
GND2
VCC1
USB1_M
USB1_P
VCC2
USB1_5V
USB2_5V
VCC_USB5V
L40
NC
R357
ID_USB
USB2_M
USB2_P
CON12
40P-2X20
USB3_5V
USB2_5V
USB1_5V
MR_OUT
Y_OUT
PR_OUT
COM_PR
CVBS_IN
TXD
REMOTE
GPIO1
SCL1
VCC5V
MR_IN
DM3
DP3
DM2
DP2
DM1
DP1
ML_OUT
PB_OUT
COM_PB
COM_Y
RXD
POWER_USB
GPIO2
SDA1
ML_IN
DMP_DTV-R
DMP_DTV-L
SC/RC_GREEN
SC/RC_RED
SC/RC_BLUE
SC2_VOUT
IR-in_USB
ON_USB
SCL_EXT
SDA_EXT
Scart1_Rout
Scart1_Lout
IO1
IO2
IO3
IO4
R520
R526
R529
R530
R533
R535
R536
R537
CON14
USB-5P-MINI-AB
SHIELD
1 VBUS
2 D-
3 D+
4 GND
5 CID
R436
R406
R412
R413
D92
D93
D100
INPAQ_VPORT
XP12
USB PORT
VCC
D-
D+
GND
D101
D102
+16V
C370
C392
1000uF/25V
1.5nF
U26
MP1580
BS
IN
SW
GND
SYN
EN
COMP
FB
C401
100P
L78
33uH
C400
C393
R452
33K
R448
10K
D3
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C394
R441
100K
R446
4.7K
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1
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1



0.81*(1+Rup/Rdown)=1.8V---Rup=10K, Rdown=8.2K
Vcc3.3for MST9E19A analog
U5
AMS1117-3.3
ADJ
OUT
IN
5Vstb
L6
FB
+3.3Vstb
C11
0.1uF
CA6
47uF/16V
C12
0.1uF
CA7
47uF/16V
Vcc1.8 for MST9E19A
VDDC for MST9E19A Core
U6
AP1520
VCC
OUT
OCSET
EN
Vss
FB
L7
15uH
VDDC
C15
NC
R23
3K
C16
NC
R24
3.9K
D8
B/240A
CA9
470uF
CA8
106M
R25 10K
R26
3K
CA10
106M
C14
0.1uF
C13
0.1uF
C44
C45
C46
C47
C48
C49
0.1uF
+3.3AVDD for AVDD_HDMI
+3.3VA
AVDD_HDMI
pin6,pin12
L8
C17
2.2uF
C18
0.1uF
C19
0.1uF
+3.3AVDD for AVDD_AU
AVDD_AU
L9
C20
2.2uF
C21
0.1uF
C22
2.2uF
+3.3AVDD for AVDDA
L10
AVDDA
pin36
C23
2.2uF
C24
0.1uF
+3.3AVDD for AVDD_SIF
AVDD_SIF
L11
C25
2.2uF
C26
0.1uF
3.3V for AVDDPLL2
L12
AVDD_MemPLL
C27
2.2uF
C28
0.1uF
+3.3V for VDD_MPLL
VDD_MPLL
L13
C29
2.2uF
C30
0.1uF
C31
0.1uF
POWER-ON/OFF
R41
NC/1K
Q37
NC/AO3401
L32
Vcc3.3for MST9E19A Digital
VDDP
L14
CA12
47uF/16V
C34
C35
C36
C37
C38
C39
C40
C41
C42
C43
0.1uF
MStar semiconductor
深圳市高新区南区科技南十路国际技术创新研究院C座4楼
TEL:0755-26996895 FAX:0755-26996830
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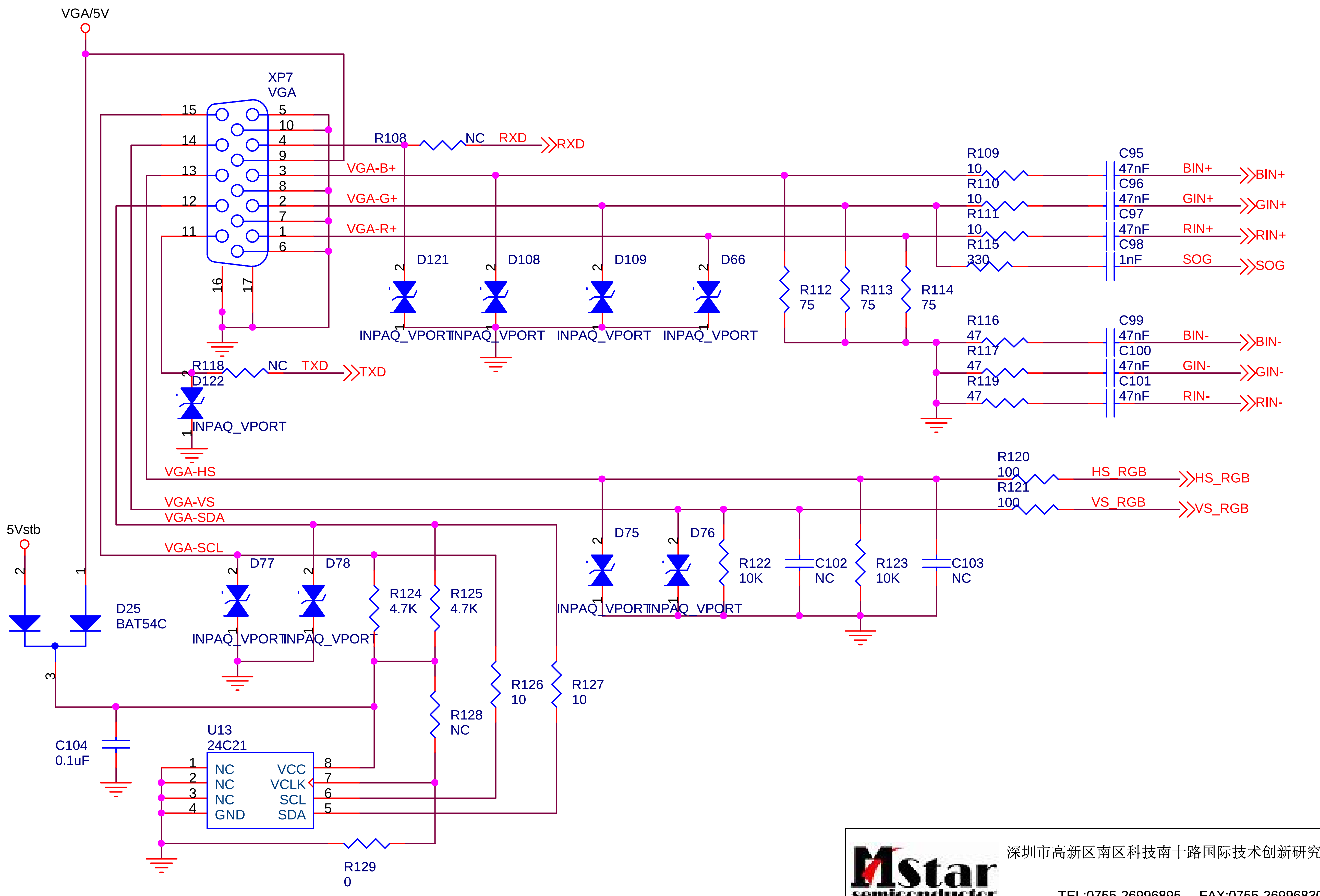
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Location Near IC Pin.
Location Near IC Pin.
DVI INPUT
VGA INPUT
SCART INPUT
VIDEO INPUT
U8
MST9E19A
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Location Near IC
LG NEW ADD RECHANGE
LG NEW CHANGE
Debug port
Debug port
Mode Selection
NEW INTERFACE 070416
I2C address at A0.
HDCP I2C address at A4.
GPIOF_SEL=01,VDO_PORT_SEL=00 for I2S input
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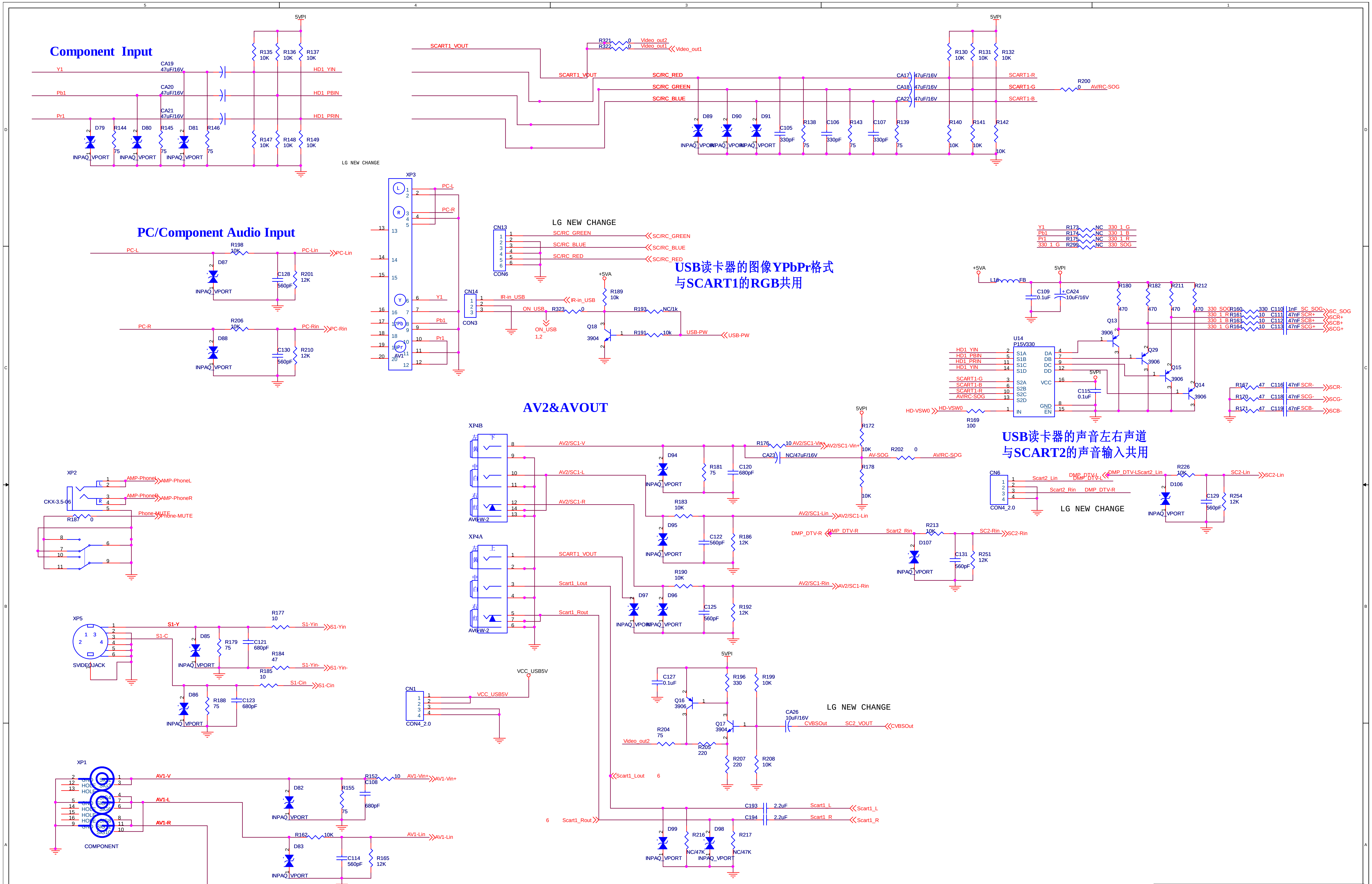
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Size A	Document Number MST9E19A — Rev 2.0
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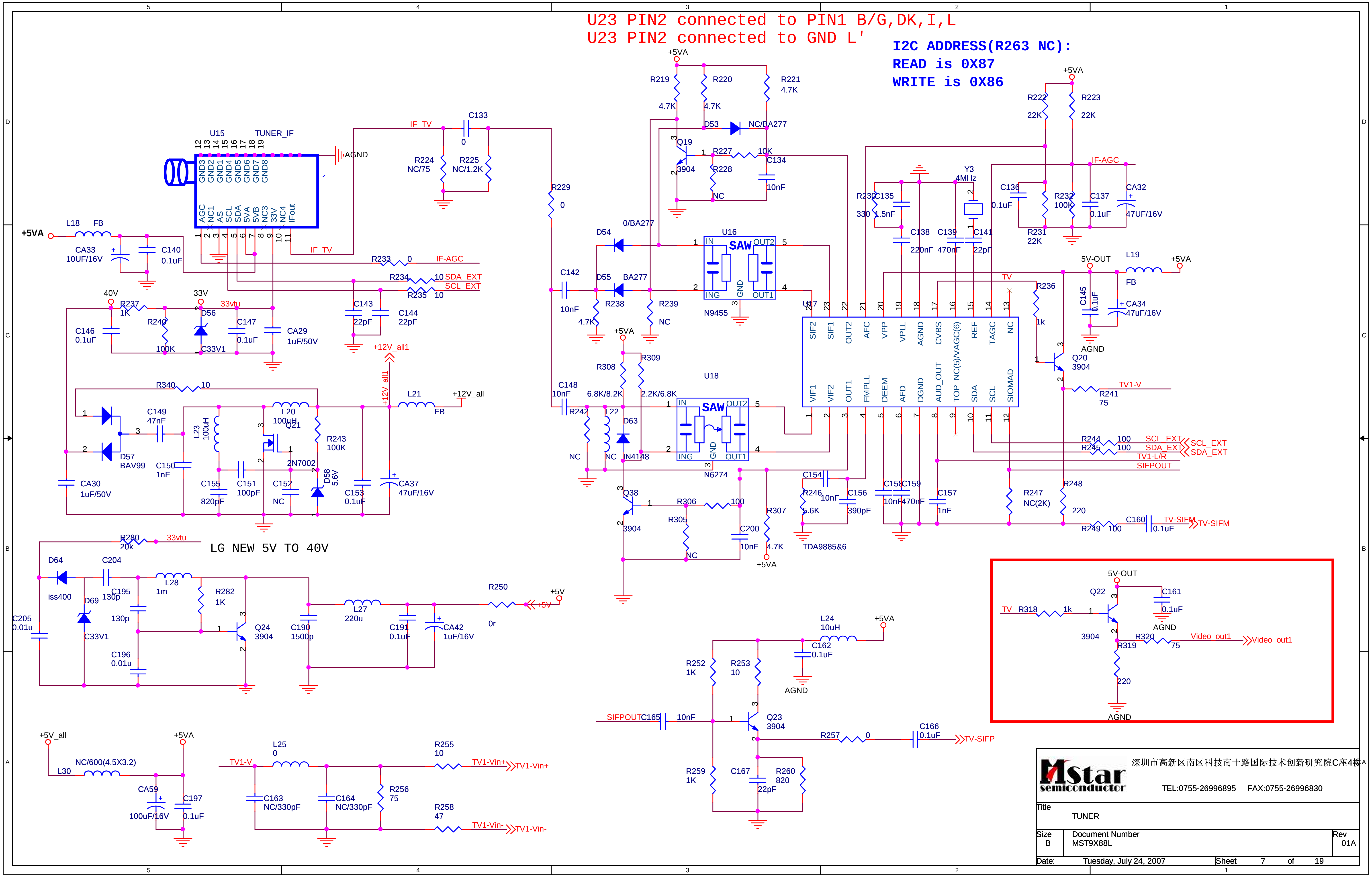
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Title	VGA	
Size A	Document Number MST9E19A	Rev 2.0
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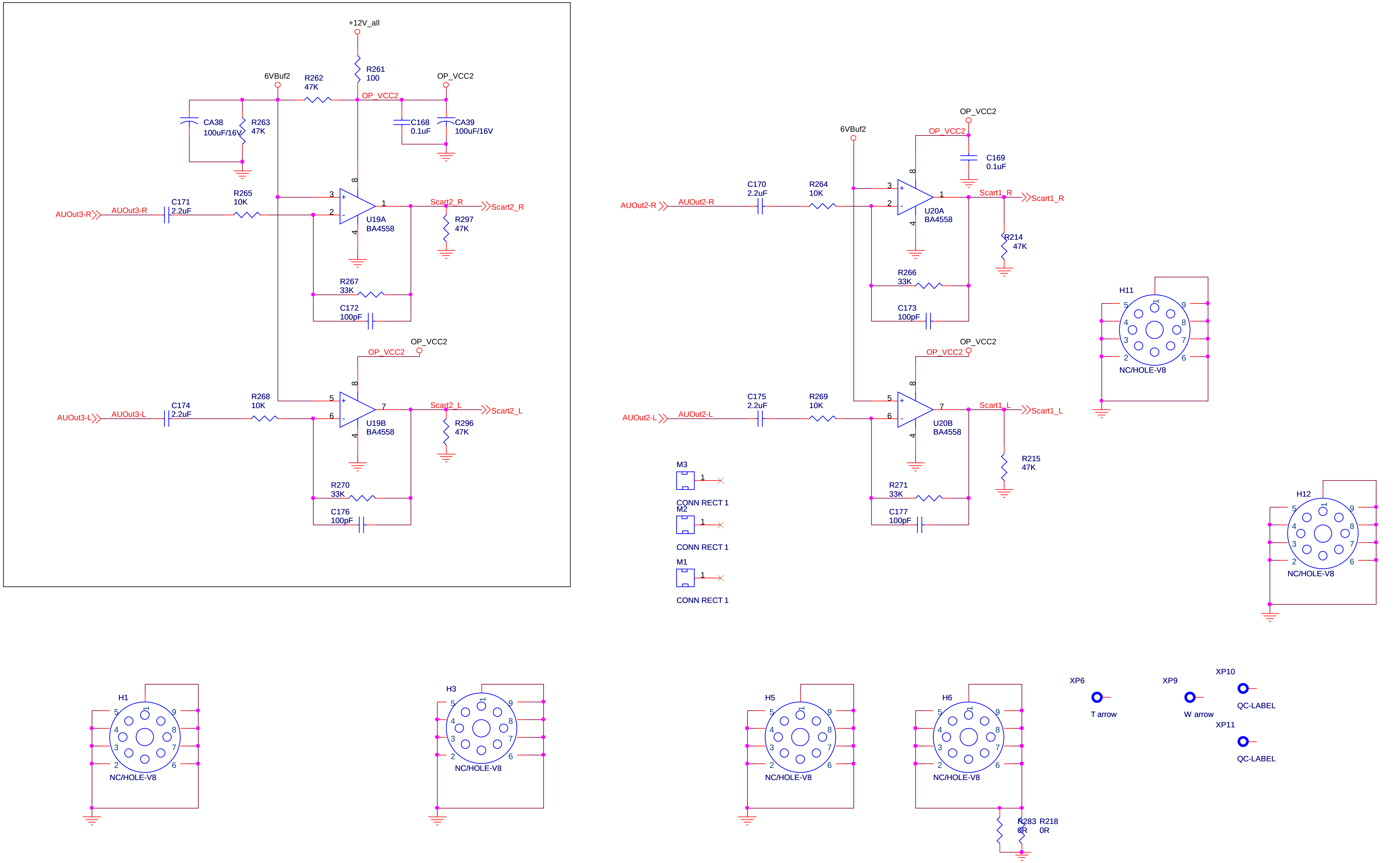


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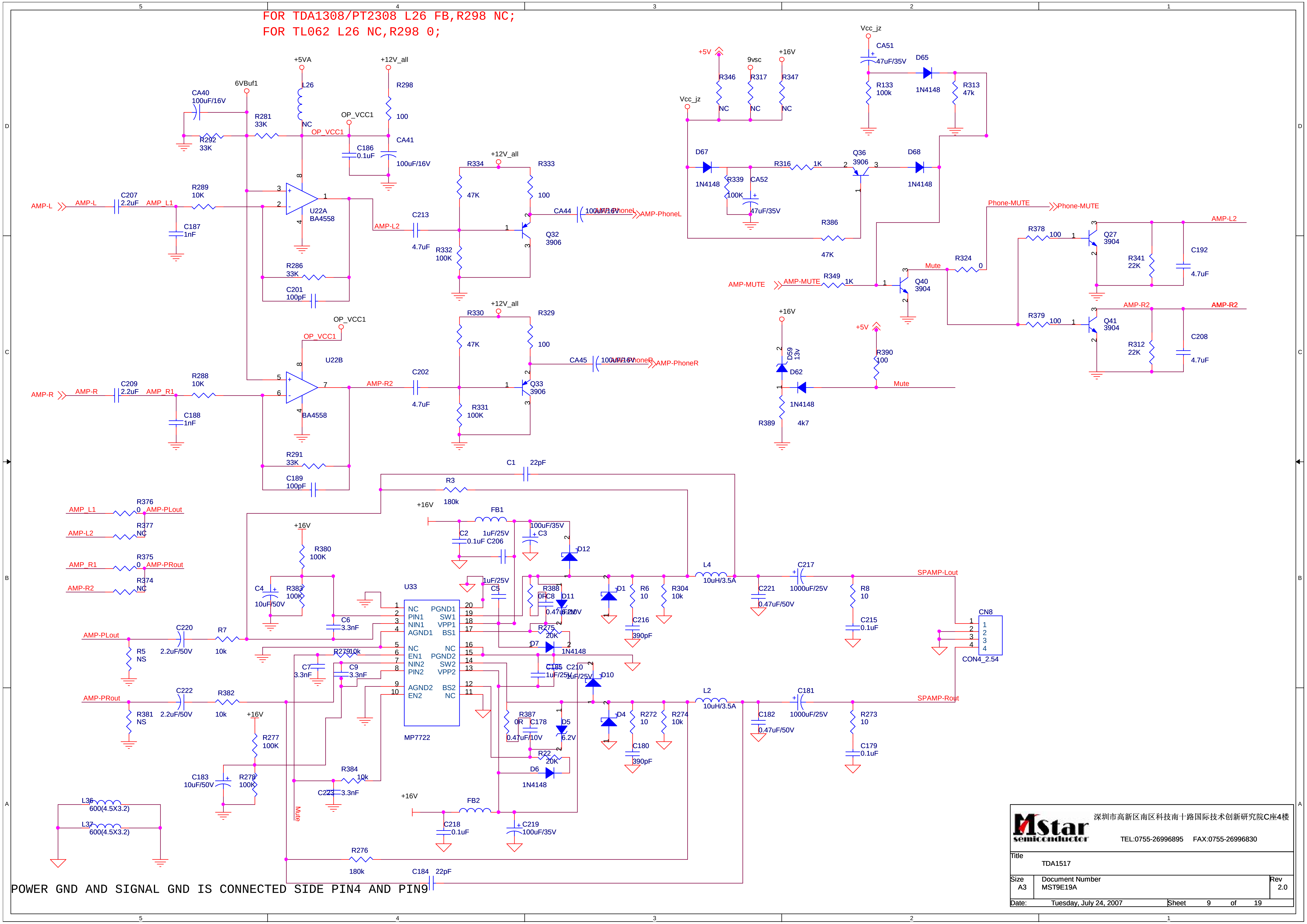
Title	Video input	
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U23 PIN2 connected to PIN1 B/G,DK,I,L
U23 PIN2 connected to GND L'
I2C ADDRESS(R263 NC):
READ is 0X87
WRITE is 0X86
U15 TUNER_IF
AGC NC1 AS SCL SDA 5VA 5VB NC3 33V NC4 IFout
GND3 GND2 GND1 GND4 GND5 GND6 GND7 GND8
+5VA
AGND
IF_TV
IF-AGC
SDA_EXT
SCL_EXT
33vtu
+12V_all1
+12V_all
LG NEW 5V TO 40V
U16 SAW N9455
U18 SAW N6274
U17 TDA9885&6
SIF2 SIF1 OUT2 AFC VPP VPLL AGND CVBS NC(5)/VAGC(6) REF TAGC NC
VIF1 VIF2 OUT1 FMPLL DEEM AFD DGND AUD_OUT TOP SDA SCL SIOMAD
Y3 4MHz
5V-OUT
TV1-V
TV1-L/R
SIFPOUT
TV-SIFM
TV-SIFP
Video_out1
TV1-Vin+
TV1-Vin-
+5V_all
+5V
Mstar semiconductor
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TEL:0755-26996895 FAX:0755-26996830
Title TUNER
Size B
Document Number MST9X88L
Rev 01A
Date: Tuesday, July 24, 2007
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Audio OP(AUOUTL3/AUOUTR3; AUOUTL2/AUOUTR2)



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Size: A3	Document Number: MST9E19A	Rev: 0.01
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MStar semiconductor

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